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600 Ways
to
Get Rich!

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600 WAYS
TO
GET RICH

When Your Pockets are Empty.

BEING AN IMMENSE COLLECTION OF THE MOST SALE-
ABLE AND MONEY MAKING DISCOVERIES, FORM-
ULAS, RECIPES, MECHANICAL SECRETS AND
METHODS, FROM WHICH PERSONS OF VERY
MODERATE CAPITAL CAN COMMENCE A
REMUNERATIVE BUSINESS IN ANY
CITY OR VILLAGE.

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M. YOUNG, Publisher,

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YOUNG'S

GREAT

BOOK OF SECRETS.

READER—In publishing this Book of Secrets, we do it with the firm belief that it will be the means of doing much good to the thousands that have never before had an opportunity to obtain them. Many of these Secrets have already been put in the market, and are now having very large sales. They are, of course, sometimes called by different names than those given in this book. Whoever puts any of these valuable Medicines in market can give them such names as they think most attractive, or that might have a tendency to add to their sales. From the sales of some of these Secrets hundreds of thousands of dollars have been made, and they are now so firmly established in this country, and also in Europe, that they will probably be sought after as long as time lasts.

If you desire to commence business for yourself, select from this Book one of these Secrets, one that you think would be the most saleable in your locality, and manufacture it in small quantities at first. As your sales improve, and you see your way more clear to increase your business, invest more largely in goods. Sell to families and stores, and if you have the means at your command, leave it on commission and advertise it in every way that you can. Talk about your goods whenever you have an opportunity, and by so doing you will get others inquiring about them, and you will soon have a business started, with an income from it that will surprise you. The Patent Medicine business is the most profitable, and the surest return, (if properly advertised), of any business that you can engage in. If you are unable to put up any of these valuable Remedies, but have the desire to do so, we would suggest that you write out the Recipe for making the Centennial Gold Medal Prize Vinegar and take

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sample of vinegar with you in a bottle to show to storekeepers and families, and sell them the Secret of manufacturing this excellent vinegar for 50 cents. Any person tasting this article will willingly pay you the price you charge for the Recipe. Persons keeping provision stores will make money by purchasing this article from you. You can sell 20 Recipes a day, at 50 cents each, '\$10 a day, all profit). If some object to paying your price, do not refuse to take less, rather than not sell to them. You can use any other Secret that you wish in the same manner, but we mention the vinegar Recipe because that is an article that can be sold to almost everybody.

We call especial attention to the Secret of the Paul Brothers, Violet Ink, published in this Book. Any industrious man or woman, boy or girl, can make money *without Capital to start with*, if they follow closely the Instructions we give in relation to the sale of this valuable Secret. There are many Private Recipes, and Mechanical Secrets given in this Book, that have been manufactured very largely during the past few years. Fortunes have been made in the manufacture of a Single Recipe. We will not attempt to advise out of the many Secrets here given, just the one for the reader to establish a business from, we leave you to judge for yourself what article would be the most suitable and saleable. The manufacture of the *Phosphorous Paste* has been built up to a stupendous business. Dr Parkers Diarrhoea Cure, is now one of the established Medicines of the world, and you cannot do better than to manufacture this Remedy. The Starch Polish is a standard article. The Egyptian Perfume Secret is worth a hundred dollars. It has had most extensive sale.

If you do not wish to leave home, sell all you can in your own town, and then advertise in your local newspaper, telling them what you have for sale, and what it will do. The medicines will always sell. Invalids abound in all communities, and the Remedies you have in this Book of Secrets are the best the world ever produced. After you have got a little start advertise more largely, and you will find your profits steadily increasing, and by continued exertion, and constant effort, you will establish yourself in a permanent and profitable business.

RECIPES.

The Paul Brothers Violet Ink.—In 1871, 1872, and 1873, two young men, (twin Brothers), Frenchmen, were often met in different parts of France and England, dressed alike, and by closely watching them they were seen to enter counting houses, banks, insurance offices, green grocers, merchants, and stores and shops of every kind. They carried no luggage or large sample cases like commercial travellers or drummers. They had the appearance of young men with some determined object in view, and as they flitted swiftly by the busy throng, on the crowded thoroughfares, little or no comment was made on them except by those that noticed the remarkable resemblance each bore to the other. These two young men were the celebrated PAUL BROTHERS, that made clear in three years, between them, over One Hundred Thousand Pounds Sterling, without one cent of capital to start with. Previous history does not record a similar case. They stood alone up to 1871. Their method of making a fortune was not known to the general public until they had finished their successful tour over France and England. They did not advertise or manufacture goods. They did not force their wares on those they met. They had determined on a Plan, (successful as it proved to be), and they followed it until victory crowned them with financial success. In 1870 they made the discovery of a very rich VIOLET WRITING INK. They put it up in bottles, and sold it for Two Shillings English currency. But they were very poor and could not advertise or commission it, and they struggled hard, but could not get ahead. They walked from shop to shop, every day, occasionally selling a bottle. One dark, bleak Saturday night, in the City of Paris, out of money, foot sore, dishearten and hungry, they entered a Cafe to trade a bottle of their Violet Ink, (if they could), for their supper. The keen proprietor tested their great discovery and was amazed. He offered them five francs to learn him their Secret so that he could make his own ink, and never have to buy any more. The Paul Brothers faltered. It was hunger on one side, and the parting with their Secret on the other. They decided to accept the Frenchman's paltry five franc piece, and made the Violet Ink in his presence. They then determined to sell that Secret to all France and England. The five francs carried them over 'till Monday morning. From that day fortune never failed them. They each took a pint bottle of the Violet Ink in their pocket, and visited stores, banks, offices, and everywhere that Ink is used or sold. They asked a moment's time of the storekeeper to show him their writing done with this Ink. Then they told him he could make that Ink for a trifle per gallon. He could sell it in his store, or use it for his own busi-

ness purposes. Five francs was their price to give the Secret. They found hundreds of thousands ready to buy. Their fortune was made. Three years they worked selling this Secret in this way. Very many days they made five and six hundred francs, and in England they were known to make even more than that sum in a single day. They retired in the fall of 1873, worth over half a million dollars, every dollar of which was made selling the Secret for making their elegant Violet Ink.

We purchased that Secret in Paris from the Paul Brothers, and we will now send it to you FREE when you order Young's Great Book of Secrets. You can make the Violet Ink in five minutes in your own home. It cost next to nothing to manufacture. Any storekeeper will pay you 50 cents for the Secret after you have shown him your sample. Anybody that writes will buy this Secret from you, for it is something of great value. Any morning, after breakfast, you can sell it to thirty storkekeepers at 50 cents each—\$15 a day clear profit. If you are smart and active you can teach fifty every day. Young ladies can easily sell 50 a day. You can commence at once and each day your income will increase. It is not peddling, as you are dealing entirely with business men, teaching them the Secret to manufacture use or sell the Paul Brothers Violet Writing Ink, and you will be heartily welcomed.

ORIGINAL RECIPE OF THE PAUL BROTHERS VIOLET WRITING INK.

USED IN THE GOVERNMENT BUILDINGS IN FRANCE, ENGLAND AND GERMANY.

TO MAKE ONE GALLON.—Take an ounce of Violet Aniline. Dissolve it in one gill of hot Alcohol. Stir it a few moments. When thoroughly dissolved, add one gallon boiling water, and the ink is made. This ink is usually sold in cities at \$2 per pint bottles, \$1 for half pints, and 50 cents for gill bottles. This is the original recipe that was bought by us from the Paul Brothers in Paris. It is worth, to an enterprising man or woman, **One Thousand Dollars.** Do not bury it—use it, and make money out of it.

CAUTION.—As the Aniline Colors of Commerce vary a great deal in quality, the amount of dilution must vary with the sample used, and the shade determined by trial. The above recipe is for the very best first quality Violet Aniline. In some localities it may not be easily obtained. If you desire to make one gallon from the best Violet Aniline, we will get it for you from an Importer of Colors in New York. It costs us 50 cents an ounce. That makes one gallon. We will send it to you at 50 cents an ounce, by Express. It cannot go by mail.

To Cure Bleeding and Blind Piles.—This is the celebrated French Surgeon (Dr Chevazzi's) great cure for Piles. If the piles be very hot and painful, they should be

Will you be so kind as to help me?
There are bugs in my house and I am
almost ill with discouragement, as I have
been trying various remedies without
reaching satisfactory results. If you will
print a cure for this plague I surely will
be thankful.

MRS. C. A. S.

"Windsor Park." 4/22/15

This is the time of year when letters
begin to come in containing the same re-
quest. Once more I will give the remedy
that is infallible if used in the right way,
with the hope that every housekeeper
will paste it in her book, for the subject
will not be treated again this year.

The trouble with many women is that
they leave this most important matter
to servants, who attend to it superficial-
ly, merely going over the beds without
realizing that the insect is liable to be
found as well behind the pictures and in
the furniture, and their labor so performed
is merely waste of time. Shake-together in
a large bottle a half pint each of wood
alcohol and turpentine and a half ounce
each of powdered camphor and corrosive
sublimate. Buy a long handled bristol
brush such as artists use. Then clean
your room, take the bed apart and brush
into every crack and crevice with the
liquid. Go around all the molding of the
room, being careful not to touch the pa-
per, for it will leave a stain. Go in
the same way over the backs of the pic-
tures and the unvarnished portions of the
furniture and afterward look carefully
every morning for traces of the enemy,
for some may have escaped you. If neces-
sary repeat the process, and I promise
you that, if your work has been done as
advised you will need no more than two
applications to be entirely free from this
annoyance, which if neglected amounts to
a positive disgrace.

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well fomented by means of a sponge, with hot camomile and poppy-head tea, three times a day, for half an hour each time, and at bed-time a hot white bread poultice should be applied. If the heat be not great, and if the pain be not intense, the following ointment will be found efficacious; powdered opium one scruple; camphor, (powdered by means of a few drops spirits of wine), half a drachm; powdered galls one drachm; spermaceti ointment, three drachms. Mix—To be applied night and morning. The bowels should be kept gently opened by one or two teaspoonfuls of compound confection of senna, take every morning. The tea is made from four poppy heads and four oz. camomile blows, boiled in two quarts water half an hour. This is a valuable Recipe.

To Cure Sick Headache.—Gather sumac leaves in the Summer, and spread them in the sun a few days to dry. Then powder them fine, and smoke, morning and evening for two weeks, also whenever there are symptoms of approaching headache. Use a new clay pipe. If these directions are adhered to this medicine will surely effect a permanent cure

To Cure a Consumptive Cough.—Take three pints rain water, half pound raisins chopped fine, three tablespoonfuls flax seed, sweeten to a syrup with honey, and boil down to a quart. Add three teaspoonfuls of extract of anise. Take a tablespoonful eight times a day.

To Cure Baldness.—Colonge water two ounces; tincture of cantharides two drachms; oil of lavender or rosemary, of each ten drops. These applications must be used twice a day for three or four weeks, but if the scalp become sore, they must be discontinued for a time, or used at longer intervals:

When the hair falls off from diminished action of the scalp, preparations of cantharides are excellent. The following will cause the hair to grow faster than any other preparation: beef marrow soaked in several waters, melted and strained, half a pound; tincture of cantharides (made by soaking for a week one drachm of powdered cantharides in one ounce of proof spirit), one ounce; oil of bergamot twelve drops.

Whooping Cough.—Dissolve a scruple of salt of tartar in a gill of water; add to it ten grains of cochineal; sweeten it with sugar. Give to an infant a quarter teaspoonful four times a day; two years old half spoonful; from four years a tablespoonful. Great care is required in the administration of medicines to infants. We can assure paternal inquirers that the foregoing may be depended upon.

Liquid Glue.—Dissolve one ounce of borax in a pint of boiling water; add two ounces of shellac, and boil in a covered vessel until the lac is dissolved. This forms a very useful and cheap cement, and withstands damp much better than the common glue. This is superior to any Prepared Glue in market.

Phosphorous Paste for Destroying Rats and Mice.—Melt one pound of lard, with a very gentle heat, in a large mouthed bottle or other vessel plunged into warm water; then add half an ounce of phosphorous, and one pint of proof spirit; cork the bottle securely, and as it cools shake it frequently, so as to mix the phosphorous uniformly; when cold pour off the spirit (which may be preserved for the same purpose), and thicken the mixture with flour; Small portions of this paste may be placed near the rat holes, and being luminous in the dark it attracts them, is eaten greedily, and is certainly fatal. Put it up in small tin boxes, and sell at 25 cents each. There is a firm in this city that has made over thirty thousand dollars manufacturing this article.

Dr. Parker's Great Cure for Diarrhœa and Cramps in Stomach.—Two parts tincture camphor, tincture opium, tincture African Cayenne, essence peppermint, one part tincture rhubarb, Mix. Dose—Half teaspoonful for an adult, and from five to ten drops for a child. Repeat the dose in fifteen minutes if the patient is not relieved. Bathe the bowels with strong vinegar, This is one of the most valuable Secrets that this book contains, It has saved hundreds of lives. If you manufacture this article and sell a few bottles in any locality, its great virtues will soon spread far and wide, and you will have orders from families, druggists, and others. Put it up to retail for 25 cents.

Dropsy.—Take one pint of bruised mustard seed, two handfuls of bruised horseradish root, eight ounces of lignum-vitæ chips, and four ounces of bruised Indian hemp root. Put all the ingredients in seven quarts of cider, and let it simmer over a slow fire until it is reduced to four quarts. Strain the decoction, and take a wineglassful four times a day, for a few days, increasing the dose to a small teacupful three times a day. After which use tonic medicines. This remedy has cured cases of dropsy in one week's time which had baffled the skill of many eminent physicians. For children the dose should be smaller.

Indelible Marking Ink Without a Preparation.—Dissolve separately one ounce of nitrate of silver, and one and a half ounces of sub-carbonate of soda, (best washing soda) in rain water. Mix the solutions, and collect and wash the precipitate in a filter; while still moist rub it up in a marble or hard wood mortar with three drachms of tartaric acid; add two ounces of rain water, mix six drachms white sugar, and ten drachms of powdered gum arabic, half an ounce of archil and water to make up six ounces in measure. It should be put up in short drachm bottles, and sold at 25 cents. This is the best ink for marking clothes that has ever been discovered. There is a fortune in this recipe, as a good marking ink is very saleable.

Austin's Persian Starch Enamel.—

Melt over a slow fire five pounds refined paraffine, and when it is all melted add two hundred drops oil of citronelli. Place several new round pie pans, well oiled with lard oil or sweet oil, on a level table, and pour about six tablespoonfuls of the Polish into each pan. Let them stand until they are cool enough to lift into a pail or basin of water; let the pan float on the water a moment so as to cool the bottom, and then submerge or press the pan into the water, until it is cool enough to stamp the Polish out into cakes. This must be done before it gets too hard, and therefore it will require close watching. Have a round tin stamp made to cut cakes about the size of a candy lozenge. Stamp them out, and let them cool well before taking them out of the pans. Put it up in square paper boxes, (nine cakes in each, retail at 5 cents a box). Thirty cakes in oval boxes, 25 cents. The cost of the 25 cent boxes, filled, ready for market, is about $5\frac{1}{2}$ or 6 cents; the small size boxes about $1\frac{1}{2}$ cents. They are also put up in 10 cent boxes which is a very saleable size. Directions—To a pint of boiling starch stir in two of the cakes or tablets, or three cakes to a quart. This gives an elegant lustre to linen or muslin, and imparts a splendid perfume to the clothes, and makes the iron pass very smoothly over the surface. It requires but half the ordinary labor to do an ironing. It is admired by every lady. It prevents the iron from adhering to the surface, and the clothes remain clean and neat much longer than by any other method known. Over six thousand stores are selling this article in New York and Brooklyn. For Ladies, we know of no business so suitable and pleasant to engage in. If you desire further information write your questions briefly and we will answer them at once.

To Remove Grease or Stains from Clothing.—Ordinary benzine is as good a grease eradicator as is now used. Put up in four ounce bottles and label it "The Nation's Grease Extractor," and sell for 20 or 25 cents. Benzine generally costs about 15 cents a gallon. Dip the corks in wax.

Pomatus.—For making pomatus, the lard, fat, suet, or marrow used, must be carefully prepared by being melted with as gentle a heat as possible, skimmed and cleared from the dregs which are deposited on standing. Take mutton suet, prepared as above, one pound; lard three pounds; carefully melted together, and stirred constantly as it cools, two ounces oil bergamot being added just after lifting the pomade from the fire. **HARD POMADE.**—Mutton suet and lard each one pound; white wax, four ounces; oil of bergamot one ounce. Put up in short, large mouthed bottles, and sell at 15 or 20 cents.

Cement for Broken China, Glass, &c.

—The following recipe, from experience, we know to be a good one, and, being nearly colorless, it possesses advantages which

liquid glue and other cements do not: Dissolve half an ounce of gum acacia in a wineglass of boiling water; add plaster of Paris sufficient to form a thick paste, and apply with a brush to the parts required to be cemented together.

Sore and Weak Eyes.—Sulphate of zinc three grains; tincture of opium ten drops, water two ounces. To be applied three or four times a day.

Another.—Dissolve five grains acetate of morphia, ten grains sugar of lead, and six grains sulphate of zinc, in five ounces rose-water. Bathe the eyes freely three times a day. For Scrofulous Sore Eyes, take blue violets, dig them up, top and root, wash clean, dry them, and make a tea. Drink several times a day, wetting the eyes each time, and it will soon effect a cure.

Cut or Bruise.—Apply the moist surface of the inside coating or skin of the shell of a raw egg. It will adhere of itself, leave no scar, and heal without pain.

Wens.—Take the yolks of eggs, beat up, and add as much fine salt as will dissolve, and apply a plaster to the Wen every ten hours. It cures without pain or any inconvenience.

Sprained Ankle or Wrist.—Wash the ankle very frequently with cold salt and water, which is far better than warm vinegar or decoctions of herbs. Keep the foot as cool as possible to prevent inflammation, and sit with it elevated on a high cushion. Live on low diet, and take every day some cooling medicine such as Epsom salts. It cures in a few days.

Best Blacking for Boots and Shoes.—Ivory black one and a half ounces, molasses one and a half ounces sperm oil three drachms, strong oil of vitriol three drachms, common vinegar half a pint. Mix the ivory black, molasses and vinegar together, then mix the sperm oil and oil of vitriol separately, and add them to the other mixture.

Freckles.—Muriate of ammonia half a drachm, lavender water two drachms, rain water half a pint. Applied with a sponge two or three times a day.

To take Marking Ink out of Linen.—A saturated solution of cyanuret of potassium, applied with a camel's hair brush. After the marking ink disappears, the linen should be well washed in cold water.

Hair Dye.—This preparation has held the market in Europe for several years, and gives entire satisfaction. Solution No. 1.—Hydrosulphuret of ammonia one ounce, solution of potash three drachms, distilled or rain water one ounce, (all by measure). Mix, and put into small bottles, labeling it No. 1. Solution No. 2.—Nitrate of silver one drachm, rain water two ounces. Dissolved and labeled No. 2. Directions.—The solution No. 1. is first applied to the hair with a tooth brush, and the application continued for fifteen or twenty minutes. Then let the hair dry a short time. The solution No. 2. is then brushed

over a comb being used to separate the hairs and allow the liquid to come in contact with every part. Care must be taken that the liquid does not come in contact with the skin, as the solution No. 2. produces a very permanent dark stain on all substances with which it comes in contact. If the shade is not sufficiently deep, the operation may be repeated. The hair should be cleansed from grease before using the dye. This can be easily done by washing the head in clear water, adding thereto about two tablespoonfuls of ordinary washing soda. Dry the hair well with a towel. This Dye (No. 1. and No. 2. put up in a box together), is sold at 50 cents. A fine business can be built up by manufacturing and selling this Hair Dye.

Sore Throat.—Pour a pint of boiling water upon twenty or thirty leaves of common sage, let the infusion stand for half an hour. Add vinegar sufficient to make it moderately acid, and honey according to the taste. It must be used several times a day. Another excellent remedy is a strong solution of salt and water. Gargle every hour. A wet towel worn on the throat at night will assist in affecting a cure. For a Putrid Sore Throat use a gargle of brewers' yeast six times a day, also bind thin slices of salt pork on the throat.

Dyspepsia.—One of the first things to be attended to is to regulate the bowels, which in this disease are always in a costive state. The best means of keeping them loose is the eating of a handful of clean wheat bran, once or twice a day. This is the most simple and efficacious method of cleansing the stomach. It may be eaten from the hand with a few swallows of water to wash it down, also use, to regulate the stomach and bowels, the daily use of common salt, in teaspoonful doses, dissolved in a half tumblerful of water, taken in the morning fasting. Avoid rich diet, and use brown bread instead of that made of superfine flour.

The Best Pill in the World.—Two pounds of aloes, one pound of gamboge, four ounces of the extract of colocynth, half a pound of castile soap, two fluid ounces of oil of peppermint, and one fluid drachm of cinnamon. Mix and form into pills. These pills are the most celebrated of any in the world, and the fortunate manufacturer has accumulated over a million dollars from their sale.

Toothache.—Take equal parts of camphor, sulphuric ether, ammonia, laudanum, tincture of cayenne, and one-eighth part oil of cloves. Mix well together. Saturate with the liquid a small piece of cotton, and apply to the cavity of the diseased tooth, and the pain will cease immediately. Put up in long drachm bottles. Retail at 25 cents. This is a very saleable preparation, and affords a large profit to the manufacturer.

Cure of Warts.—The easiest way to get rid of warts is to pare off the thickened skin which covers the prominent wart; cut it off by successive layers, and shave it till you come to the

surface of the skin, and till you draw blood in two or three places. Then rub the part thoroughly over with lunar caustic, and one effective operation of this kind will generally destroy the wart; if not, you cut off the black spot which has been occasioned by the caustic, and apply it again; or you may apply acetic acid, and thus you will get rid of it. Care must be taken in applying these acids, not to rub them on the skin around the wart.

Dye Silk Lilac.—For every pound of silk take one and a half pounds of archil, mix it well with the liquor, make it boil a quarter of an hour, dip the silk quickly, then let it cool, and wash it in river water, and a fine half violet, or lilac, more or less full, will be obtained.

To take Ink Stains out of Mahogany.—Put a few drops of spirits of nitre in a teaspoonful of water, touch the spot with a feather dipped in the mixture, and on the ink disappearing, rub it over immediately with a rag wet in cold water, or there will be a white mark which will not be easily effaced.

To Clean Marble.—Take two parts common soda, one part of pumice-stone, and one part of finely powdered chalk; sift it through a fine sieve, and mix it with water; then rub it well over the marble, and the stains will be removed; then wash the marble over with soap and water, and it will be as clear as it was at first.

Paint.—To get rid of the smell of oil paint plunge a handful of hay into a pail of water, and let it stand in the room newly painted.

To Remove Offensive Breath.—For this purpose almost the only substance that should be admitted at the toilets is the concentrated solution of chloride of soda. From six to ten drops of it in a wineglassful of spring water, taken immediately after the operations of the morning are completed.

In some cases, the odor arising from carious teeth is combined with that of the stomach. If the mouth be well rinsed with a teaspoonful of the solution of the chloride in a tumbler of water, the bad odor of the teeth will be removed.

White Metal.—This is a splendid article for spoons, castors, ornaments, and in short articles of every description. It closely resembles silver, and may be used with great profit by the manufacture of an infinite variety of commercial articles of almost every description.

The alloy is ten ounces of lead, six ounces of bismuth, four drachms of antimony, eight ounces of brass, and ten ounces of block tin, all melted together. This can be run into moulds or hammered into any shape, as it is perfectly malleable.

Ringworm.—The head is to be washed twice a day with soft soap and warm soft water; when dried, the places to be rubbed with a piece of linen rag dipped in ammonia from gas tar; the patient should take a little sulphur and molasses, or some

other genuine aperient, every morning; brushes and combs should be washed every day, and the ammonia kept tightly corked.

Imitation Pure Silver.—So perfect in its resemblance that no chemist living can detect it from pure virgin silver. It is all melted together in a crucible. Quarter of an ounce of copper, two ounces of brass, three ounces of pure silver, one ounce of bismuth, two ounces of saltpetre, two ounces of common salt, one ounce of arsenic, one ounce of potash. Add a little borax to make it run easy.

Windsor Soap.—This is made with lard. In France they use lard with a portion of olive or bleached palm oil. It is made with one part of olive oil to nine of tallow. But a great part of what is sold is only curd (tallow) soap, and scented with oil of caraway and bergamot. The brown is color with burnt sugar, or umber.

Honey Soap.—White cured soap $1\frac{1}{2}$ pounds, brown Windsor soap half pound. Cut them into thin shavings, and liquefy as directed above for scented soap; then add four ounces of honey, and keep it melted till most of the water is evaporated; then remove from the fire, and when cool enough add any essential oil. According to Piesse the honey soap usually sold, consists of fine yellow soap, perfumed with oil of citronella.

Martin's Splendid Black Ink.—Boil logwood twenty-two pounds, in enough water to yield fourteen gallons decoction. To a thousand parts of this decoction, when cold, add one part chromate of potash. The mixture is to be well stirred. The proportions are to be carefully observed, and the yellow chromate, not the birchromate, employed. This ink possesses some great advantages, to adhere strongly to paper, so that it can neither be washed off by water, nor even altered by weak acids, to form no deposit, and not be in the least acted upon by steel pens.

Red Writing Ink.—Best ground Brazil wood four ounces, diluted acetic acid one pint, alum half an ounce. Boil them slowly in a covered tinned copper or enamelled saucepan for one hour, strain, and add one ounce gum.

Yellow Ink.—Gamboge triturated with water, and a little alum added.

Green Ink.—Rub three and a half drachms Prussian Blue, and three drachms of gamboge, with two ounces of mucilage, and add half a pint of water.

Gold and Silver Ink.—Fine Bronze powder, or gold or silver leaf, ground with a little sulphate of potash, and washed from the salt, is mixed with water and a sufficient quantity of gum.

Sympathetic or Secret Inks.—The solutions used should be so nearly colorless that the writing cannot be seen till the agent is applied to render it visible.

Boil oxide of cobalt in acetic acid. If a little common salt be

added, the writing becomes green when heated; but with nitre it becomes a pale rose color.

A weak solution of sulphate of copper. The writing becomes blue when exposed to the vapor of ammonia.

Manifold Paper.—A process by which several letters can be written at one time. It is commonly known as copying paper. Mix lard with black lead or lamp-black into a stiff paste, rub it over tissue paper with flannel, and wipe off the superfluous quantity with a soft rag. These sheets alternated with black carbon paper, and written with a hard pencil, will produce several copies of a letter at once.

To Make a Barrel of Good Soap.—Dissolve fifteen pounds of bar soap in fifteen gallons boiling water, and let it get cold. Cut up the soap in slices. When cold it will be thick like jelly.

Dissolved fifteen pounds of sal-soda in fifteen gallons more of boiling water, which will take three minutes, then add to this composition six pounds of unslacked lime; let these articles boil together twenty minutes. When cold and settled, turn off this fluid, and stir it up with the soap, be careful not to disturb the sediment, then add three pints of alcohol, and stir all the articles together.

Wash Equal to Paint.—Take a half bushel of unslacked lime, and slack it with boiling water, cover it during the process. Strain it, and add a peck of salt dissolved in warm water, three pounds of ground rice boiled to a thin paste put in boiling hot, half pound of Spanish whiting, and one pound of clear glue dissolved in warm water. Mix and let it stand several days. Keep it in a kettle, and put it on as hot as possible with a brush.

The above is the receipt used for the President's house at Washington. It is said to look as well and last as long as oil paint, on wood, brick or stone.

To Clean Kid Gloves.—Make a strong lather with curd soap and warm water, in which steep a small piece of new flannel. Place the glove on a flat unyielding surface—such as the bottom of a dish, and having thoroughly soaped the flannel (when squeezed from the lather), rub the glove till all dirt be removed, cleaning and re-soaping the flannel from time to time. Care must be taken to omit no part of the glove, by turning the fingers, etc. The gloves must be dried in the sun, or before a moderate fire, and will present the appearance of old parchment. When quite dry, they must be gradually pulled out, and will look new.

Corns.—Boil a potato in its skin, and after it is boiled take the skin and put the inside of it to the corn, and leave it on for about twelve hours; at the end of that period the corn will be nearly cured.

To Destroy Flies in a Room.—Take half a teaspoonful of black pepper, one teaspoonful of brown sugar, and one tablespoonful of cream; mix them well together and place them in a room on a plate, where the flies are troublesome and they will soon disappear.

Preserving Eggs.—The following mixture was patented several years ago by Mr. Jayne of Sheffield, England. He alleged that by means of it he could keep eggs two years. A part of his composition is often made use of—perhaps the whole of it would be better. Put into a tub or vessel one bushel of quick lime, two pounds of salt, half a pound of cream of tartar, and mix the same together, with as much water as will reduce the composition, or mixture to that consistence that it will cause an egg put into it to swim with its top just above the liquid. Then put and keep the eggs therein.

French Polish for Boots and Shoes.—Mix together two pints of the best vinegar and one pint of water, stir into it a quarter of a pound of glue, broken up, half a pound of logwood chips, a quarter of an ounce of finely powdered indigo, a quarter of an ounce of the best soft soap and a quarter of an ounce of isinglass. Put the mixture over the fire and let it boil ten or fifteen minutes. Then strain the liquid, and bottle and cork it. When cold it is fit for use. The polish should be applied with a clean sponge.

To Remove Water Stains from Black Crape.—When a drop of water falls on a black crape veil or collar, it leaves a conspicuous white mark. To obliterate this, spread the crape on a table (laying it on a large book or paper to keep it steady), and place underneath the stain a piece of old black silk. With a large camel's hair brush, dipped in common ink, go over the stain, and then wipe off the ink with a small piece of old soft silk. It will dry immediately, and the white mark will be seen no more.

To Cure Pains in the Feet Occasioned by Walking.—If your feet become painful from walking or standing too long, put them into warm salt and water mixed in the proportion of two large handfuls of salt to a gallon of water. Sea water made warm, is still better. Keep your feet and ankle in the water until it begins to feel cool, rubbing them well with your hands. Then wipe them dry and rub them long and hard with a coarse towel. Where the feet are tender and easily fatigued, it is an excellent practice to go through this practice regularly every night, also on coming home from a walk. With perseverance this has cured neuralgia in the feet.

Fever and Ague.—First clear the bowels with the fluid extract of senna and jalep two drachms, infusion of cloves two ounces; mix. To be taken at a draught. In the cold stage

give hot drinks and try to excite warmth. In the hot ague give cooling drinks. Then give quinine one scruple, alcohol four ounces, sulphuric acid five drops; mix—in two tablespoonful doses, every half hour, at the same time give five drop doses of tincture or fluid extract of veratum and rub the patient with dry towels. In the intermission give three grain doses, once in four hours, and continue it a fortnight after the cessation of the attacks.

The following is known as the Cuban Remedy for chills and fever. Just before the approach of the fever spread two plasters about two inches wide composed of black pepper, bruised fine (not ground), mixed into a paste with the white of an egg. Immediately before the fever comes bind them on the inside of the wrists, and lie down. Do not remove them until the fever has passed off. If the fever is not entirely broken by the first application, apply fresh plasters of the same the next time the fever comes on.

To Make Your Teeth as White as Snow.—Take one part chloride of lime and fifteen parts of prepared chalk, adding half an ounce of pulverized Peruvian bark and a few drops of otto of roses. Use it thoroughly morning and evening.

To make Champagne Cider for Four Cents a Gallon.—Take five gallons lukewarm water, add one gallon common molasses, three pounds of brown sugar one gallon of vinegar, one gallon of yeast quarter of a pound of tataric acid. Let all stand in the warm water to dissolve one hour, then add cold water. Let stand forty-eight hours to work, with bung out. This makes forty-two gallons. In all cases the barrel should be full. To keep for a length of time add one pound of mustard. Bottle and seal it well.

To Drive Cockroaches from Your Dwellings.—Strew pulverized hellebore root on the hearth, floor, or places they frequent at night. In the morning the roaches will be found either dead or dying, for such is their avidity for this plant, that they never fail to eat it when they can get it. Black pulverized hellebore may be had at all herb shops. Put up in small tin boxes and retail at twenty-five cents.

To Cure Deafness.—Obtain pure pickarel oil and apply four drops morning and evening to the ear. Great care should be taken to obtain oil that is perfectly pure.

To Clean Your Dwellings from Bed Bugs.—Corrosive sublimate and the white of an egg, beat together and laid with a feather around the crevices of the beds and the sacking is very effectual in destroying bugs in them. Tansy is also said to be very effectual in keeping them away. Strew it under the sacking bottom. The best extermin-

ator is black pulverized hellebore root, it destroys them. Place it where the bugs will be likely to crawl.

To Make Paint for One Cent a Pound.

—To one gallon of soft hot water add four pounds sulphate of zinc (crude). Let it dissolve perfectly, and a sediment will settle at the bottom. Turn the clear solution into another vessel. To one gallon of paint (lead and oil), mix one gallon of the compound. Stir it into the paint slowly for ten or fifteen minutes, and the compound and paint will perfectly combine. If too thick thin it with turpentine. This recipe has been sold to painters as high as \$100 for the privilege to use the same in their business.

To Make Hens Lay the Whole Year.

—Give each hen half an ounce of fresh meat every day, and mix a small amount of red pepper with their food during the winter. Give them plenty of grain, water, gravel and lime and allow no cocks to run with them.

How to Raise a Mustache.—Tincture of benzoin compound two drachms, tincture of Spanish flies two drachms, castor oil six ounces, oil bergamot one drachm, oil of verbena fifteen drops, strong alcohol nine ounces. Circulation should be stimulated first by friction with a rough towel. apply to the whiskers and mustache morning and evening.

To Make Cucumber Vines bear Five Crops.—When a cucumber is taken from the vine let it be cut with a knife, leaving about the eighth of an inch of the cucumber on the stem, then slit the stem with a knife from its end to the vine leaving a small portion of the cucumber on each division, and on each separate slit there will be a new cucumber as large as the first.

Silver Plating Fluid.—Take one ounce of precipitate silver to half an ounce of cyrate of potash and a quarter of an ounce of hyposulphite of soda, put all in a quart of water, add a little whiting, and shake before using. Apply with a soft rag. Put up in ounce bottles, and retail at twenty-five cents. This secret is worth \$100 to an agent to sell to families.

Chapped Hands and Lips.—One quarter pound of honey, and one quarter pound sal-seda with one pint of water. Apply often.

Pulmonic Wafers for Coughs.—White sugar three and a half pounds, tincture or syrup of ipecac two ounces, antimonial wine one ounce, morphine five grains, dissolved in a tablespoonful of water; with ten drops sulphuric acid, half an ounce tincture blood root, one ounce syrup of tolu. Add these to the sugar, and mix the whole mass as the confectioners' do for lozenges, and cut into lozenges of the ordinary size. Use from six to twelve of these in twenty-four

hours. These wafers are equal to any made and are generally sold at high prices.

Nervous Headache.—Extract hyocymus five grains, pulverized camphor five grains; Mix. Make four pills, one to be taken when the pain is most severe in nervous headache. Or three drops tincture nux-vomica in a spoonful of water, two or three times a day.

Felons.—One tablespoonful of red lead, and one tablespoonful of Castile soap and mix them with as much weak lye as will make it soft enough to spread like a salve, and apply it on the first appearance of the felon, and it will cure in ten or twelve days.

Restore Eyesight.—Let there be an occasional pressure of the finger on the ball of the eye. Let the pressure always be from the nose and towards the temples, and wash the eyes three times a day in cold water. If this simple advice is followed the day is not far distant when partial blindness shall disappear from the world.

Enlarged Veins of the Leg.—Apply firmly strips of leather spread with soap plaster. Generally it is better to support the whole limb with a strong calico bandage which should be applied before getting out of bed, It is well to use friction in connection with iodine ointment.

Costiveness.—Common charcoal is highly recommended for costiveness. It may be taken either in tea or tablespoonful, or even larger doses according to the exigencies of the case, mixed with molasses, repeating it as often as necessary. Bathe the bowels with pepper and vinegar. Or take two ounces of rhubarb, add one ounce of rust of iron, infuse in one quart of wine. Half a wineglassful every morning. Or take pulverized blood root one drachm, pulverized rhubarb one drachm, Castile soap two scruples. Mix and roll into thirty-two pills. Take one morning and night. By following these directions it may perhaps save you from a severe attack of piles or some other kindred disease.

Washing Made Easy.—To save your linen and your labor pour on half a pound of soda two quarts of boiling water, in an earthenware pan; take half a pound of soap, shred fine, put it into a saucepan with two quarts of cold water, stand it on a fire till it boils, and when perfectly dissolved and boiling add it to the former. Mix it well, and let it stand till cold, when it has the appearance of a strong jelly. Let your linen be soaked in water, the seams and any other dirty part rubbed in the usual way and remain till the following morning. Get your wash boiler ready, and add to the water about a pint basin full. When lukewarm put in your linen and allow it to boil twenty minutes. Rinse it in the usual way, and that is all

which is necessary to get it clean, and to keep it in good color. The above receipt is invaluable to housekeepers. Give it a trial.

Mint Vinegar.—Put into a wide-mouthed bottle fresh nice clean mint leaves enough to fill it loosely, then fill up the bottle with good vinegar, and after it has been stopped close for two weeks it is to be poured off clear into another bottle, and kept well corked for use. Serve with lamb when mint cannot be obtained.

Excellent Hair Wash.—Take one ounce of borax, half an ounce of camphor, powder these ingredients very fine and dissolve them in one quart boiling water; when cool the solution will be ready for use; damp the hair frequently. This wash effectually cleanses, beautifies and strengthens the hair, preserves the color and prevents early baldness. The camphor will form into lumps after being dissolved, but the water will be sufficiently impregnated.

Chilblains, Sprains, etc.—One raw egg, well beaten, half a pint of vinegar, one ounce spirits of turpentine, a quarter of an ounce of spirits of wine, a quarter of an ounce of camphor. These ingredients to be beaten well together, then put in a bottle and shaken for ten minutes, after which to be corked down tightly to exclude the air. In half an hour it is fit for use. To be well rubbed in, two, three or four times a day. For rheumatism, in the head, to be rubbed at the back of the neck and behind the ears. In chilblains, this remedy is to be used before they are broken.

The Egyptian Perfume.—In manufacturing this article, follow the same directions, and use the same ingredients as are used in Austin's Starch Enamel published on another page of this book, with the simple alteration of using the oil of jassemine instead of the oil of citronella. In perfuming use one ounce of oil of jassemine to every pound and a half of paraffine. Stamp out in cakes one inch long, half an inch wide, and one-eighth of an inch in thickness. Put each cake into a small sliding box, and sell at ten cents each. It is very saleable and you can make money fast by putting this up. It is new and has not been introduced as yet in many localities, and if you are first in the field you are sure to do a large business at it. Give it a trial.

Summer Champagne.—To four parts of seltzer water add one ounce of Moselle wine, or hock, and put a teaspoonful of powdered sugar into a wineglassful of this mixture; an ebullition takes place and you have a sort of champagne which is more wholesome in hot weather than the genuine wine known by that name.

Deafness.—Take three drops of a snoop's gall, warm, and drop it into the ear before going to bed. The ear must be

syringed with warm soap and water in the morning. The gall must be applied for three successive nights. It is only efficacious when the deafness is produced by cold. The most convenient way of warming the gall is by holding it in a silver spoon over the flame of a light. The above remedy has been frequently tried with perfect success.

Gout.—This is Col. Birch's receipt for rheumatic gout or acute rheumatism, commonly called in England the "Chelsea Pensioner." Half an ounce of nitre (saltpetre), half an ounce of sulphur, half an ounce of flower of mustard, half an ounce of Turkey rhubarb, quarter of an ounce of powdered guaiacum. Mix, and take a teaspoonful every other night for three nights, and omit three nights, in a wineglassful of cold water, water which has been previously well boiled.

Life Belts.—An excellent and cheap life belt, for persons proceeding to sea, bathing in dangerous places, or learning to swim, may be thus made:—Take a yard and three-quarters of strong jean, double, and divide it into nine compartments. Let there be a space of two inches after each third compartment. Fill the compartments with very fine cuttings of cork, which can be had at any cork-cutting establishment. Work eylet holes at the bottom of each compartment to let the water drain out. Attach a neck-band and waist strings of stout boot web, and sew them on strongly.

Bleeding from the Nose.—From whatever cause, may generally be stopped by putting a plug of lint into the nostrils; if this does not do, apply a cold lotion to the forehead; raise the head, and place both arms over the head, so that it will rest on both hands; dip the lint plug, slightly moistened, into some powdered gum-arabic, and plug the nostrils again; or dip the plug into equal parts of powdered gum-arabic and alum. An easier and simpler method is to place piece of writing paper on the gums of the upper jaw, under the upper lip, and let it remain there for a few minutes.

Scarlet Fever.—It is unnecessary for a child to die of scarlet fever as it is that it should be blind with cataract. Let us see. At any time before the body has finished its infectual struggle we are able to help it, not by wonderful medicine, but by the knowledge of anatomy and the application of a little common sense. We consult the sympathetic nerve, and do what it commands us to do. We must give this child salt when it wants it. We must give it acid when it has a fever and anxiously craves it—not vinegar, but lemon juice, because the first coagulates albumen and the latter does not, on account of the amount of oxygen it contains. To imitate the soothing mucus in the intestines, which is now wanting, and to give some respiratory food at the same time, we add some gum arabic. To restore and relieve the injured nerve, we apply moist warmth.

In practice we can fulfil all this with the following manipulations:—Undress the child and bring it to bed at the very first signs of sickness. Give it, if it has already fever, sourish warm lemonade, with some gum-arabic in it. Then cover its abdomen with some dry flannel. Take a well-folded bed sheet and put in boiling hot water; wring it out by means of dry towels and put this over the whole and wait. The hot cloth will perhaps require repeated heating. According to the severity of the case and its stage of progress, perspiration will commence in the child, in from ten minutes to two hours. The child then is saved; it then falls asleep. Soon after the child awakes, it shows slight inclination for food; help its bowels, if necessary, with injections of soap, oil and water, and its recovery will be as steady as the growth of a plant in the green-house if well treated.

Of course if the child were already dying nothing could save it, or if it has effusions in the lining of the heart or brain, it is much better that it should die. But if the above is applied in due time, under the eyes and directions of a competent physician, I will guarantee that not one in a hundred children will ever die of scarlet fever. I know this will startle some of my readers, especially those who have already lost children, but I shall go still further. I maintain that a child will never get scarlet fever if properly treated. If the child has correctly mixed blood it will never catch the scarlet fever if put in bed with a sick child. This is still more startling, but nothing easier got rid of.

Poisons.—As a general rule, give emetics after poisons that cause sleepiness and raving; chalk, milk, butter, and warm water, or oil, after poisons that cause vomitings and pain in the stomach and bowels, with purging; and when there is no inflammation about the throat, tickle it with a feather to excite vomiting. Always send immediately for a medical man.

Moths.—A very pleasant perfume, and also preventive against moths, may be made of the following ingredients:—Take of cloves, carraway seeds, nutmeg, mace, cinnamon, and Tonquin beans, of each one ounce; then add as much Florentine orris-root as will equal the other ingredients put together. Grind the whole well to powder, and then put it in little bags, among your clothes, etc.

Bald Heads.—A most valuable remedy for promoting the growth of the hair, is an application once or twice a day, of wild indigo, and alcohol. Take four ounces of wild indigo, and steep it about a week or ten days in a pint of alcohol, and a pint of hot water, when it will be ready for use. The head must be thoroughly washed with the liquid, morning and evening, application being made with a sponge or soft brush. Another excellent preparation is composed of three ounces of castor oil, with just enough alcohol to cut the oil, to which add twenty drops tincture of cantharides, and perfume to suit. This not only softens and

imparts a gloss to the hair, but also invigorates and strengthens the roots of the hair.

Dry Cough.—Take of powdered gum-arabic half an ounce; liquorice-juice half an ounce. Dissolve the gum first in warm water, squeeze in the juice of a lemon, then add of paregoric two drachms; syrup of squills one drachm. Cork all in a bottle, and shake well. Take one teaspoonful when the cough is troublesome.

Black Silk Reviver.—Boil logwood in water half an hour, then simmer the silk half an hour, take it out and put into the dye a little blue vitriol, or green copperas; cool it and simmer the silk for half an hour. Or, boil a handful of fig leaves in two quarts of water until it is reduced to one pint; squeeze the leaves, and bottle the liquor for use. When wanted sponge the silk with it.

Boils.—These should be brought to a head by warm poultices of camomile flowers, or boiled white lily root, or onion root by fermentation with hot water, or by stimulating plasters. When ripe they should be destroyed by a needle or lancet. But this should not be attempted until they are fully proved.

Bunions.—May be checked in their early development by binding the joint with adhesive plaster, and keeping it on as long as any uneasiness is felt. The bandaging should be perfect, and it might be well to extend it round the foot. An inflamed bunion should be poulticed, and larger shoes be worn. Iodine twelve grains, lard or spermaceti ointment half an ounce, makes a capital ointment for bunions. It should be rubbed on gently twice or three times a day.

Cautions in Visiting the Sick.—Do not visit the sick when you are fatigued, or in a state of perspiration, or with the stomach empty—for in such conditions you are liable to take the infection. When the disease is very contagious, take the side of the patient which is near to the window. Do not enter the room the first thing in the morning before it has been aired; and when you come away take some food, change your clothing immediately, and expose the latter to the air for some days. Tobacco smoke is a fine preventive of malaria.

To Destroy the Taste of Medicine.—Have the medicine in a glass as usual, and a tumbler of water by the side of it, then take the medicine and retain it in the mouth, which should be kept closed, and if you then commence drinking the water the taste of the medicine is washed away. Even the bitterness of quinine and aloes, may be prevented by this means.

Cheap and Good Vinegar.—To eight gallons of clear rain water, add three quarts of molasses; turn the mixture into a clean tight cask, shake it well two or three times, and add three spoonfuls of good yeast, or two yeast cakes, place the cask in a warm place, and in ten or twelve days add a sheet of

common brown wrapping paper, smeared with molasses, and torn into narrow strips, and you will soon have good vinegar. The paper is necessary to form the "mother" or life of the vinegar.

Cancer.—The following is said to be a sure cure for cancer:—A piece of sticking plaster is put over the cancer, with a circular piece cut out of the centre, a little larger than the cancer, so that the cancer and a small circular rim of healthy skin next to it is exposed. Then a plaster, made of chloride of zinc, blood root and wheat flour, is spread on a piece of muslin, the size of this circular opening, and applied to the cancer for twenty-four hours. On removing it, the cancer will be found burned into and appear of the color and hardness of an old shoe sole, and the circular rim outside of it will appear white and parboiled, as if scalded by hot steam. The wound is now dressed, and the outside rim soon separates, and the cancer comes out in a hard lump, and the place heals up. The plaster kills the cancer, so that it sloughs like dead flesh, and never grows again. The remedy was discovered by Dr. King, of London, and has been used by him for several years with unfailing success, and not a case has been known of the reappearance of the cancer when this remedy has been applied.

Soothing Syrup.—Alcohol, oil of peppermint castor oil, of each one ounce; mix, add oil of anise, half drachm; magnesia, sixty grains; pulverized ginger, fourty grains; water, two ounces; white sugar to form a syrup.

Soothing Syrup.—Take one pound of honey; add two tablespoonfuls of paregoric, and the same of oil of anise seed; add enough water to make a thick syrup, and bottle. For children teething, dose, teaspoonful occasionally.

Balm of Beauty.—Pure soft water, one quart; pulverized Castile soap, four ounces; emulsion of bitter almonds, six ounces; rose and orange flower water, of each, eight ounces; tincture of benzoin, two drachms; borax, one drachm; add five grains bichloride of mercury to every eight ounces of the mixture. To use, apply on a cotton or linen cloth to the face, etc.

Liquid for Forcing the Beard.—Colonge, two ounces; liquid hartshorn, one drachm; tincture cantharides, two drachms; oil rosemary, twelve drops; lavender twelve drops. Apply to the face daily and await results. Said to be reliable.

To Increase the Flow of Milk in Cows.—Give your cows three times a day, water slightly warm, slightly salted, in which bran has been stirred at the rate of one quart to two gallons of water. You will find if you have not tried this daily practice, that the cow will give twenty-five per cent more milk, and she will become so much attached to the diet that she will refuse to drink clear water unless very thirsty, but this mess she will drink at almost any time, and ask for more. The amount of this drink necessary is an ordinary

water-pail full each time, morning noon and night. Avoid giving cows "slops," as they are no more fit for the animal than they are for the human.

Flaxseed Tea.—Macerate one ounce flaxseed and half an ounce of bruised liquorice root in one pint of boiling water for two hours, in a lightly closed vessel; filter, and add one fluid ounce of lemon juice. This is a good drink in cases of catarrh.

To Remove Grease.—Aqua ammonia, two ounces, soft water one quart, saltpetre one teaspoonful; shaving soap in shavings, one ounce; mix all together; dissolve the soap well, and any grease or dirt that cannot be removed with this preparation, nothing else need be tried for it.

Remedy for Neuralgia.—Hypophosphite of soda taken in one drachm doses three times a day in beef tea is a good remedy for this painful affection. So is the application of bruised horseradish; or the application of oil of peppermint applied lightly with a camel hair pencil

Jockey Club.—Spirits of wine five gallons orange-flower water one gallon, balsam of Peru, four ounces, essence of bergamot eight ounces, essence of musk eight ounces. essence of cloves four ounces, essence of neroli two ounces.

Centennial Gold Medal Vinegar No.

1.—Mix twenty-five gallons of warm rain water, with four gallons molasses and one gallon of yeast, and let it ferment; you will soon have the best of vinegar; keep adding these articles in these proportions as the stock is sold. Use brewer's yeast.

For Grocers Sale.—Take three barrels; let one of them be your vinegar barrel; fill this last up before it is quite empty, with molasses, two gallons; soft water, eleven gallons; yeast, one quart; keeping these proportions in filling up the whole three barrels; sell the vinegar out of your old vinegar barrel as soon as it is ready, which will be in a short time; when nearly empty, fill it up with the fluid as before, and pass on to sell out of the next barrel; by the time it is disposed of go on to the last; then go back to the first, filling up your barrels in every case when nearly empty, and you will always keep a stock of good vinegar on hand unless your sales are very large; in which case, follow the next process. Have the bung-holes open in the barrels to admit air. The free admission of warm air hastens the process. Use brewers' yeast.

Vinegar in Three Days.—Get a quantity of maple, beech, or basswood chips or shavings, and soak these in good vinegar, for two or three days. With these chips you will fill a barrel, which has been pierced with a large number of inch holes all around the sides for the free admission of air among the chips (the more holes in the barrel the better, for the more

air the sooner the vinegar will be made); cut another barrel in two halves, place one half below the barrel with the chips, and the other half above it. The top tub must have its bottom pierced with a number of gimlet holes, in which are placed several threads of twine, to conduct the vinegar evenly over the chips. The liquid drains down slowly through the chips and out of a faucet near the bottom of the barrel into the lower tub. It should run through every four hours, and then be baled or pumped back. Directions to make vinegar from sugar: Use one an half pounds to each gallon of water; of the dregs of molasses barrels, use two pounds to each gallon of water; small beer lager beer, ale, etc., which have become sour, make good vinegar by being reduced with water; small beer needs but little water, lager beer as much water as beer; to two gallons of cider, add half gallon of water; you can also make excellent vinegar out of the artificial cider mention below. Use, in every case, soft water to make vinegar, and use two quarts yeast to every barrel. It makes much quicker if the fluid is slightly lukewarm. Leach either of these preparations through the shavings.

This process should be attended to during warm weather, or in a room where a pretty high temperature is kept up, as it will not work otherwise,

White Wine Vinegar.—Mash up twenty pounds raisins, and add ten gallons of water; let it stand in a warm place for one month, and you will have pure white wine vinegar. The raisins may be used a second time the same way.

Sick Canaries.—Baker's sponge cake dipped in sherry wine is strongly recommended for sick canary birds that have been moulting. The bird will no doubt eat sparingly of it, but the remedy is excellent. It has been known in many instances to restore the voice and health of canaries after shedding eighteen months and two years. Birds often continue moulting from weakness, and a short time feeding them on the cake and sherry, in connection with their seed, soon shows a beneficial effect. I would also advise not to give the bird any greens to eat, nor apples, while in the condition described. Canaries having asthma are relieved, and sometimes cured, by giving them a pap made of baker's bread boiled in sweet milk. In very bad cases, remove their seed for a few days and let them feed entirely upon it. The following treatment completely restored a fine singer which I had quite despaired of, as he had been sick and silent for months: Leave off seed entirely. Make a paste of sweet milk and bread crumbs, throwing the crumbs into the milk while boiling, and stir until quite smooth; add a pinch of cayenne pepper, varied occasionally by some finely-minced clove or garlic; dissolve in the drinking water a little black currant jelly, a bit of fig, or half a potash lozenge. I used all of these and my bird is well; so to which the preference should be

given I know not, though I incline to the jelly. It may take a long time to cure the bird, and if the trouble arises from hardness of the tongue, it must be painted daily with strong borax water. If he sneezes, a little olive-oil must be gently put up the nostrils. He should have plenty of tepid water to bathe in, celery, sweet apple, or lettuce. But by no means hang him close to the window, the cold is too severe, even in a moderately warm room, for a bird in delicate health. Paste must be fresh daily.

To Mend Crockery.—No. 1. Four pounds of white glue, one and a half pounds dry white lead, one-half pound isinglass, one gallon soft water, one quart alcohol, one-half pint white varnish; dissolve the glue and isinglass in the water by gentle heat if preferred; stir in the lead, put the alcohol in the varnish, and mix the whole together.

Screw in Plaster.—It often becomes desirable to insert screws into plaster walls without attaching them to any wood-work; but when we turn them the plaster gives way, and our effort is vain; and yet a screw may be inserted in plaster, so as to hold light pictures, etc., very firmly. Enlarge the hole to about twice the diameter of the screw, fill it with plaster of Paris, such as is used for fastening the tops of lamps, etc., and bed the screw in the soft plaster. When the plaster has set the screw will hold like iron.

Cure for Fever and Ague.—One-half ounce spirits nitre, one-half ounce tincture pepper, thirty-five grains quinine, one pint of brandy. Take a wineglassful three times a day, one-half hour before meals. If for a child, give only half the quantity.

Extirpation of Cockroaches.—Common red wafers, to be found at any stationer's, will answer the purpose. The cockroaches eat them and die. Also, sprinkle powdered borax plentifully around where "they most do congregate," and renew it occasionally; in a short time not a roach will be seen. This is a safe and most effectual exterminator.

To Clean Old Black Silk.—Grate two potatoes into a quart of water; let it stand to settle, and then drain it off clear. Lay a breadth of the silk—from which you have wiped off all the dust with a flannel rag—outside upward on a clean cloth spread over an ironing blanket. Sponge it across the breadth well; fold it up, taking care to keep the wetted side upward. Do all the breadths, laying them each aside; then iron them with a hot iron, having a thin piece of linen, or an old handkerchief, spread over the silk under the iron; this will prevent the silk from shining. Chloroform will cleanse the finest silks, and remove spots without injury to the fabric.

To Renovate Black Silk.—Two ounces soap bark (to be had at any drug store) soaked over night in one quart of rain-water. Pour off the water from the bark in the morning

and sponge the silk thoroughly on both sides, and hang smoothly on a clothes-horse to dry. Do not iron. Old and soiled black silks have been made to look somewhere approaching to newness and more than respectable by this process.

A Remedy for Rheumatism.—Four ounces saltpetre in one pint of alcohol; shake well and bathe parts affected; wetting red flannel with it; lay it on. It does not cure, but takes away the redness, reduces the swelling, and relieves the torment and agony.

To Drive Away Ants.—Put red pepper in the places the ants frequent the most, and scrub the shelves or drawers with strong carbolie soap.

To Remove "Red Mites" from Canaries.—Put into the cage as a perch one or more hollow sticks, with holes cut into them at short distances as in a cane pipe. The insects crawl into these, and can easily be knocked or shaken out, or destroyed by letting hot water run through the sticks. This should be done every day till the bird is relieved. Hang a piece of new white flannel in the cage at night next the perch so that it shades the bird from the light. In the morning you will find the mites on the flannel; wash, or put in a new piece the following night, and continue doing so until they are all removed. It is also well to scald the cage. The perches should be of red cedar wood.

How to Cure Drunkenness.—Sulphate of iron, five grains; peppermint water, eleven drachms; spirit of nutmeg, one drachm; one tablespoonful twice a day. This preparation acts as a stimulant and tonic, and supplies the place of the accustomed liquor.

To Restore Velvet.—Where velvet has been crushed, hold the wrong side over a basin of quite boiling water, and the pile will gradually rise. Do not lose patience, for it takes a considerable time, but the result is marvellous.

Hair Restorative.—A tea made by pouring one pint of boiling water on two tablespoonfuls of dried rosemary leaves, with a wineglassful of rum added, is excellent.

To Soften the Hands.—Before retiring, take a large pair of old gloves and spread mutton tallow inside, also all over the hands. Wear the gloves all night, and wash the hands with olive-oil and white castile soap the next morning.

To Remove White Stains from Furniture.—Have ready three pieces of woolen cloth, with one well dipped in lamp oil (or if that is not convenient linseed oil), rub the spot briskly, wet the second with alcohol and apply to oily surface, rubbing quickly, as too much alcohol will destroy the varnish, and finally polish with the third cloth, moistened with oil or furniture polish.

Soap Manufacture.—When wood ashes cannot conveniently be had it is usual for soap manufactures to use equal quantities of recently slacked lime, and sal-soda, soda ash or caustic soda, using water enough to give the ley sufficient strength to support a fresh egg. It must be very strong. The solution can be effected by heat, or stirring, or by both methods, finally drawing off, or bailing out the liquid clear of sediment, previously throwing in salt and giving time for the sediment to settle; one ton of yellow soap will require about a thousand pounds tallow and three hundred an fifty pounds resin, with ley sufficient. The same quantity of white soap will require nearly thirteen hundred pounds tallow, boiling in every case with the proper quantity of ley, until it forms a perfectly homogeneous mass by a perfect blending of the component parts all together, when it is poured out into suitable frames to harden and cool. It is afterward cut up into proper sized bars by means of wires to which handles are attached and then piled up to dry.

Solid Candles from Lard.—Dissolve quarter pound alum, and quarter pound saltpetre, in half pint water on a slow fire; then take three pounds of lard cut into small pieces, and put into the pot with this solution, stirring it constantly over a very moderate fire until the lard is all dissolved; then let it simmer until all steam ceases to rise and remove it at once from the fire. If you leave it too long it will get discolored. These candles are harder and better than tallow.

To Flavor Tobacco.—This is done by means of a mixture of one part each of lemon peel, orange peel, figs, corriander seed and sassafras; half part each of elderflowers, elderberries, and cinnamon; two parts of saltpetre, three of salt, and four of sugar. This mixture must be digested in fifty parts of water, and, before applying it flavor with an alcoholic solution of gum benzion, mastic, and myrrh. It is said that this decoction gives a flavor to common leaves resembling Porto Rico, but to this end the leaves must be well dried, about a year old, well permeated with the preparation, kept in a pile for eight days, turned daily, and finally dried.

Flavor for Cigar Makers.—Take two ounces Tonqua beans, and one ounce cinnamon; bruise and pulverize them to a powder, and put them into one pint of Santa Cruze rum; let it stand for a few days to macerate; stir all together, and with this liquid sprinkle your common or inferior tobacco. Dry out of the sun, and the flavor will be unequalled.

Unerring Test for good Flour.—Good flour is white, with a yellowish or straw-color tint. Squeeze some of the flour in your hand; if good, it will retain the shape given by pressure. Knead a little between your fingers; if it works soft and sticky, it is poor. Throw a little against a dry perpendicular surface; if it fall like powder, it is bad.

Transparent Soap.—Slice six pounds nice yellow bar-soap into shavings; put into a brass, tin or copper kettle, with alcohol, half gallon; heating gradually over a slow fire, stirring till all is dissolved; then add one ounce sassafras essence, and stir until all is mixed; now pour into pans about one an half inches deep, and when cold cut into square bars the length or width of the pan, as desired.

To Correct Musty Flour.—Carbonate of magnesia, three pounds; flour, seven hundred an sixty-five pounds; mix. This improves bad flour, causing it to become more wholesome, producing lighter and better bread than when alum is used, and absorbs and dissipates the musty smell.

Patent Self-Raising Flour.—Kiln-dried flour, one cwt.; tartaric acid, ten ounces; mix thoroughly. After two or three days, add, of bicarbonate of soda, twelve ounces; lump sugar half pound; common salt one an half pounds. Mix, and pass through the “dressing machine.” Have all the articles perfectly dry, and separately reduced to fine powder before adding to the flour. Mix with cold water, and bake at once. It produces light and porous bread.

To Cure Butter.—Take two parts of fine salt; one part loaf sugar; one part saltpetre; mix completely. Use one ounce of this mixture to each pound of butter; work well. Bury your butter firkins in the earth in your cellar bottom, tops nearly level with the ground, or store away in a very cool place, covering the butter with a clean cloth and a strong brine on the top, and it will keep two years if desired.

To Keep Butter during Hot Weather.—A simple mode of keeping butter in warm weather is to invert a large crock of earthen, or a flour pot if need be (varying with the size of the vessel containing the butter), over the dish or firkin in which the butter is held. The porousness of the earthenware will keep the butter cool, and all the more so if the pot be wrapped in a wet cloth, with a little water in the dish, with the butter. Not the porosity of the earthenware, but the rapid absorption of heat by external evaporation causes the butter to become hard.

Premium Method of keeping Hams etc.—To four gallons of water, add eight pounds coarse salt, quarter ounce potash; two ounces saltpetre; two pounds brown sugar. Boil together, skim when cold, put on the above quantity to one hundred pounds meat; hams to remain in eight weeks, beef, three weeks. Let the hams dry several days before smoking. Meat of all kinds, salmon and other fish, lobsters, etc., may be preserved for years by a light application of pyroligneous acid applied with a brush, sealing up in cans as usual. It imparts a splendid flavor to the meat, is very cheap, an and effectual preservative against loss.

Erated Bread.—One pound flour, one hundred grains carbonate of soda; sixty grains common salt; one teaspoon powdered sugar; hundred an twenty grains muriatic acid, more or less, according to its strength; one wine pint of water, inferior flour will require less. Well mix the flour, soda, salt, and sugar in a earthen vessel, then add the acid mixed with the water, stir with a wooden spoon. Bake in one loaf about one hour. Bake in tin or iron pans, but avoid the use of metallic vessels or spoons while mixing.

To Restore Rancid Butter.—Use one pint water to each pound of butter, previously adding twenty grains chloride of lime to each pint of water; wash well the butter in this mixture, afterward re-wash in cold water and salt; or melt the butter in a water bath with animal charcoal, coarsely powdered and previously well sifted to free it from dust; skim, remove, and strain through flannel; then salt.

Tomato Catsup.—Boil one bushel of tomatoes till they are soft; squeeze them through a fine wire sieve; add one an half pints of salt, two ounces cayenne pepper, and five heads of onions, skinned and separated; mix together, and boil till reduced one half; then bottle.

The Northern-Light Burning Fluid.—Get good deodorized benzine, sixty to sixty-five gravity, and to each barrel of forty-two gallons, add two pounds pulverized alum, three an half ounces gum camphor, and three an half ounces oil of sassafars, or two ounces oil bergamot; stir up and mix thoroughly together, and it will soon be ready for use. N. B.—As this fluid creates a much larger volume of light and flame than carbon oil, it is necessary to use either a high burner, such as the sun burner, to elevate the flame away from the lamp in order to keep it cool, or instead thereof, to use a burner provided with a tube for the escape of the gas generated from the fluid, such, for instance, as the Meriden burner.

Young's Cheng Wing Starch Polish.—This article has undoubtedly had a more extensive sale through agents than any other article used in the household. It is a meritorious one, and will always find sale if our directions are followed. Care must be taken to procure the ingredients marked as we give it.

DIRECTIONS AND RECIPE.

Procure from your druggist an article of commerce called and marked A 1 (not B 1), but A 1 paraffine wax. It must be the hardest wax made. If an inferior grade is used it will not produce the same result as the best A 1 wax. Please buy no other. Place your paraffine in a tin boiler or pan, or pail, or kettle, as is most convenient. Melt it over a slow fire. Use care in melting. When melted thoroughly remove the vessel from the fire; cover it to keep the liquid hot. Take some round tin pie pans, and

oil them with sweet oil as you would for pie baking, but do not use lard. Put these pans on a level table, and pour in enough of the hot wax to make a depth in each pan equal to about the thickness of one-eighth of an inch. While hot glance over the pans to see that they are level. As this is very essential, please remember it. If the pans are not level, the cakes will be all thicknesses, which should not be so. Let them cool, but not too fast. Watch them closely, and have a tin stamp ready to stamp the cakes out about the size of an ordinary candy lozenge. This stamp should be about eight inches long, larger at the top than at the bottom, so that the cakes can pass up through the stamp as you are cutting them out of the pans. Lay the cakes in another pan to cool. Before they become very hard separate them from each other; if not it will be difficult to do so when they become very hard. Do not neglect this. Have boxes made at any paper box makers in any large city. They cost about from one to two cents each; sliding boxes are the best. Have your labels printed, and commence business at once. This is a staple article. Wholesale grocers throughout the United States generally have it in stock. You can wholesale it to them, or retail it to families. This one Secret is worth one hundred times the price of this book. It has been manufactured, by the publisher of this book since 1863, and there has been a constant demand for it.

Young's Turkish or Frozen Perfumes.—This is a saleable, cheap, and meritorious Solidified Perfume. Perhaps no article of luxury has had such a continuous sale. The demand has never diminished. In 1863—simultaneous with the introduction of the Starch Polish—we introduced this novelty—*Solidified Perfume*. The sales have been simply enormous. We are selling this perfume as fast as ever, and we feel that the world is wide, and room for all, and have determined to publish the *correct Recipe in this book*, and we vouch for its reliability, as any one can test by calling on the publisher of this book, at his manufactory, 173 Greenwich street, New York, where this perfume is made nearly every day to fill orders. It is easily and cheaply made. The U. S. Revenue Department requires every person manufacturing this article to place a *one cent proprietary* stamp on every box sold. Please remember this.

RECIPE AND DIRECTIONS.

Procure A 1 Paraffine wax from any wholesale druggist. Be sure to get the hard A 1 wax. Melt it over a slow fire in any tin vessel; care should be taken not to let it burn. Be particular about this. When melted remove it from the fire, and cover the top of the vessel. Now, you must remember that Solidified Perfumes cannot be successfully made while *hot*, but they must be *warm*. The heat drives out the perfume, and counteracts the

effects of the essential oils used for perfuming purposes. For the perfume you must use only the strongest essential oils. Light extracts are worthless. Take two ounces oil lemon grass, and one-half ounce oil cloves, and one-quarter ounce oil lavender flowers ; mix them well together. For this amount of perfume you require about four quarts of the liquid paraffine. Pour the oils into the melted paraffine while warm, stirring it well while pouring. Have ready round pie pans, well oiled with olive oil. Pour in the perfumed wax until you have about one quarter inch in depth of the melted liquid Perfume in each pan. Be sure to have your pans level on the table. Have a tin stamp ready to use to cut the cakes out at the proper time. This stamp should be made larger at the top than at the bottom. It should be square. The stamp that we use is one and three-eighths inches long, and one inch wide at the stamping point. It is a little larger at the top. The edges are filed sharp as a knife, and kept so constantly. Stamp the cakes out when they are cooling, before they get too hard to cut. You must use your eyes, your hands, and common sense and good judgment at this stage of its manufacture. If it is too cold and hard you cannot cut it. If too soft your punch will stick to the soft wax. Watch it closely, and you cannot fail to have the best results. Lay the square cakes in pans to cool, or if your punch does not draw them up from the pan you are stamping, let them remain in the original pan until cold enough to box up. Use gilt boxes the size of the cake. ~~Put~~ your own price on them. They are worth 15 to 25 cents retail. Reckon your cost of manufacture, and regulate your wholesale price accordingly. We consider this information worth one thousand dollars to any smart, active man or woman. We mean just what we say. One thousand dollars is a mere song for this recipe. We have kept one man stamping out this solidified perfume for six consecutive years. Any child of good common sense can make it. Although we introduced it in 1863, we have not manufactured it continually during that time. We made it for six years, and then laid it aside. We have now commenced its manufacture again. It sells well now. We are making it from the above recipe. You have the right and privilege to do the same. But remember we do not give you the privilege to publish this recipe for sale. We give you the right to *manufacture the goods* and sell them. If the recipe is sold, you must buy this book and sell them this book containing the recipe. We own the copyright for this article, and we will protect it. The books we will sell you at a liberal discount from the retail price. But manufacturing the goods for market is the business you should give your attention to.

ADVERTISED SECRETS.

We here publish some of the advertised Secrets which we ourselves have bought from time to time during the past twenty years. Some of these Secrets we have sent \$5.00 for, many we have paid \$1.00 for, and others we have sent 50 cents to the self-styled "owners" for a copy. We do not claim that fortunes can be made from them, neither do we say that there cannot. We publish them as we received them. For what has cost us about \$200 to collect from the different parties advertising these Secrets we give for a mere trifle, and these Secrets are now as much your property to manufacture or use as the particular individuals from whom they were purchased by us.

American Gin without Distillation at Sixteen Cents per Pint.—To make this compound it is necessary to procure clean rectified spirit, either proof or in one five under proof, which can be procured at any of the distillers. Procure one gallon of proof spirit, and one ounce of juniper berries, and let them steep together for a week, then take a quarter of an ounce of the oil of juniper berries, and with this add ten drops of the oil of turpentine and five drops of the oil of sweet fennel seeds. Rub these three oils together with a sufficient quantity of loaf sugar to absorb the oils, after which add gradually the eighth of a pint of rectified spirits of wine. Stir it till the whole is thoroughly incorporated and mix it well in the proof spirits. The next day add half a pint of clean lime-water and fine it with a bit of rock alum the size of a pea. Strain off when clear—add two or three quarts of sweetened water to bring it to the strength of what is termed extra strong or strong; this will produce twelve or fourteen pints of American Gin, at a cost of little more than 16 cents per pint.

Premium Mead.—Fermented mead is made in the proportion of one pound of honey to three pints of water, or by boiling over a moderate fire till the quantity is reduced one third, three parts water and one part honey. The liquor is then skimmed and casked, care being taken to keep the cask full while fermenting, during which process the cask is left unstopped and exposed to the sun, or in a warm room, until the working ceases. The cask is then bunged, and in a few months the cellar renders it fit for use. Mead is rendered more vinous and pleasant by the addition of cut raisin, or other fruits, boiled

in the proportion of half a pound of raisins to six pounds of honey, with a toasted crust of bread ; an ounce of salt of tartar in a glass of brandy being added to the liquor when casked, to which some add five or six drops of the essence of cinnamon ; others pieces of lemon peel, with various syrups. This is not only a splendid beverage for home consumption, but will sell readily at any public resort.

Ale without Malt or Hops.—No production in this country abounds so much with saccharine matter as the shells of green peas. A strong decoction of them so much resembles, in odor and taste, an infusion of malt (termed wort), as to deceive a brewer. This decoction, rendered slightly bitter with the wood sage, and afterward fermented with yeast, affords a very excellent beverage. The method employed is as follows : Fill a boiler with the green shells of peas, pour on water till it rises half an inch above the shells, and simmer for three hours. Strain off the liquor, and add a strong decoction of the wood sage, or the hop, so as to render it pleasantly bitter ; then ferment in the usual manner. The wood sage is the best substitute for hops ; and being free from any anodyne property is entitled to a preference. Boil a fresh quantity of shells in the decoction, and when cold, it may be thoroughly impregnated with saccharine matter, as to afford a liquor, when fermented, as strong as ale.

Simple Remedy for Asthma.—The *Reper-toire de Pharmacie* gives the following simple remedy for the Asthma : Take a strong saturated solution of nitrate of potassa ; dip tinder into it, and then allow it to dry. Procure a wide-mouth phial, the cork of which has an aperture in the centre, so as to admit any hollow tube whatever—a pipe closed at the end for example. Light the piece of tinder and place it in the phial. Then cause the patient to inhale the gases that are disengaged, either through the mouth or nostrils. At the end of a few respirations he will find relief which will augment. In regard to an explanation of this mode of treatment, it is supposed that a small portion of oxygen, disengaged by the combustion of the nitrate of potassa, is inhaled by the patient. It is known that in asthmatic patients the sanguinous circulation is incomplete in the lungs, and the blood is imperfectly regenerated, that it is black, and does not burn its excess of carbon. By the oxygen absorbed, therefore, combustion may be facilitated.

Glycerine Cement.—Professor Hirzel has discovered an important use of glycerine. When glycerine is mixed with fine and well dried litharge, it yields a cement that is capable of a large number of applications. All metals and nearly all solid bodies can be bound together by this cement ; it is said to harden under water as readily as in the air, and to resist a temperature of 500 deg. It is especially recommended for such

pieces of apparatus as are exposed to the action of chlorine; hydrochloric acid, sulphuric acid, sulphurous acid, and nitric acid; also the vapor of alcohol, ether, and bisulphide of carbon, as none of these agents act upon it. The cement can be used in steam engines, pumps, foundations for machinery, and finally, as a substitute for plaster in galvano-plaster and electro-plating. The preparation of glycerine and litharge to be taken must depend somewhat upon the consistency of the cement, and its proposed uses. An excess of glycerine would retard the setting, as it does not readily evaporate.

Bordeaux Wine Imitated.—Take a quart of fine American cider, and an equal quantity of port wine, mix and shake them, put the mixed liquor in bottles, and cork them well, and let the bottles be laid on their sides. In one month it will be a very good imitation of foreign Bordeaux wine.

Great Art of Waterproofing Cloth.—For many years I have worn India rubber waterproof: but I will buy no more, for I have learned that good Scottish tweed can be made completely impervious to rain, and, moreover, I have learned how to make it so; and for the benefit of the public I have been led to sell this recipe, which is as follows: In a pail of soft water put half a pound of sugar of lead (the acetate of lead), and half a pound of alum; stir this at intervals until it becomes clear; then pour it off into another pail, and put the garments therein, and let it be in for twenty-four hours, and then hang it up to dry without wringing it. Two of my party—a lady and gentleman—have worn garments thus treated in the wildest storm of wind and rain without getting wet. The rain hangs upon the cloth in globules; in short, they are really waterproof. A fortnight ago I walked nine miles in a storm of wind and rain, such as you rarely see, and when I slipped off my overcoat my underclothes were as dry as when I put them on. This is, I think, a secret worth knowing; for cloth, if it can be made to keep out wet, is in every way better than what we know as waterproof.

How to Raise the Vinegar Plant.—What is popularly known as the vinegar plant is only a form of the “mother of vinegar,” which is, again, only a state of common mold. The manner of obtaining it is as follows: Leave a little vinegar in a small bottle to become stale (during hot, close weather is best), till a film appears on the surface. This film is the spawn or mycelium of a species of mildew, and is the incipient state of the vinegar plant proper. If a few fragments of coarse brown sugar be now added, it will somewhat aid its growth; but when the film has attained the thickness of parchment, it is ready for transfer to syrup, where it soon becomes the housewife’s normal vinegar plant. Procure a large jar or bottle, and to two quarts of boiling water add half a pound of

molasses, and half a pound of the commonest brown sugar ; stir all these ingredients well together, and when cool transfer the film from the surface of the vinegar to the surface of the syrup ; cover up to exclude air, and keep in a warm cupboard. This film will rapidly grow and form a thick, slippery gelatinous mass all over the surface of the syrup, and in course of six weeks or so the liquid will be changed to excellent vinegar. The vinegar plant can now be taken and divided into layers, or cut up into fragments, each piece of which if placed upon fresh syrup will rapidly grow and change the liquor into vinegar. The vinegar should be allowed to settle and be strained before it is used.

Fish Culture.—HOW TO SECURE NEARLY DOUBLE THE USUAL PRODUCT IN FISH RAISING.—I have closely observed the habits of many of the fishes that inhabit our southern streams, and among others the trout. Here they are migratory, or at least they leave the small streams in October, and return to them in March. They spawn in April, and the young brood are hatched out in a few days. Now my plan for increasing the yield is to have the eggs of the trout and other fishes well protected in their natural bed, where deposited by the mother, by placing over it a frame of fine wire net or cloth. But little attention is needed to find the nest of the trout or other fish ; then as soon as the eggs are all deposited you have only to put the wire net over the nest and it will keep off nearly all of the fish and insects that pray on the eggs. In this way I think you may be sure of 75 per cent. of the eggs producing young trout, and as these remain near the nest till old enough to escape from most of the dangers of their infant state, the wire net will save nearly all of them.

“Mad Stones.”—HOW TO FIND, HOW TO PREPARE, AND HOW TO USE THE GREAT NATURAL REMEDY FOR BITES OF POISONOUS OR RABID ANIMALS.—There are several possessors of what are called “mad stones,” and each of these persons is regarded as peculiarly fortunate to possess the article, which has, in many cases, been handed down from generation to generation, or has been purchased at a high price. The wonders achieved by such stones have many witnesses in their respective sections, and a single little stone has yielded its owner a handsome income, as persons bitten by snakes, mad dogs, etc., will readily pay \$2 to \$10 merely to be allowed to apply the marvelous stone to the wound. The finding of these stones has been so far mere chance. I propose to tell how they can be obtained with greater certainty. In nearly every section there is what is known as “red shale” or “red shell,” and also of a darker color, a nearly black variety of similar rocks. Among specimens of both these minerals will be found occasionally one very porous or absorbent. Try one of these on the tongue ; when one is found that will adhere strongly it is suitable to use. Grind down to convenient shape,

with a flat surface. In this way several specimens have been found which on comparison proved exactly like the famous one owned by the Pointer family, of Halifax County, Virginia, for fifty years, and performing many cures. Should you have any difficulty in finding any of these natural "mad stones," I have learned how artificial ones may be manufactured, possessing equal value; indeed, such is the secret of the great East Indian "pamboo-kaloo" remedy in cases of wounds by venomous serpents, of which are given many well authenticated instances of its virtue when the patient was bitten by the deadly cobra di capello. The stone is intensely black and highly polished, and, being porous, rapidly imbibes the blood and with it the poison. The stone adheres for a few minutes, like the "mad stone," then drops off. Analysis of one of these has shown it is a piece of charred bone, evidence of which is afforded both by the aperture of cells or tubes on its surface and by the fact that it exhibits an organic structure within. When heated, water and ammonia escape, and finally the carbon burns away, leaving a white ash which is phosphate of lime. The snake charmers from the coast also visit Ceylon proper to prepare the snake stones themselves, and to preserve the composition a secret; the manufacture of them is a lucrative trade carried on by the monks of Manilla, who supply the merchants of India. The Mexicans also have a snake stone, *piedra ponsona*, which is substantially the same as those above mentioned. To make it, it is only necessary to procure a sound, solid piece of horn, hart's horn is considered best, and roast slowly until thoroughly charred throughout. This is the whole secret of making, and the product will be found to have all the merits possessed by any already celebrated for their cures. In using either the natural or artificial, the wood must be slightly moistened with water or spittle, or what would be even better, a little spirits of harts-horn. The stone is to be then pressed into the wound and allowed to adhere until it drops off. Cures are reported in even severe cases in from eight to twelve hours. One, to my own knowledge, applied in a case of bite by a copperhead snake and effected a complete cure in twelve hours. The patient was very sick and delirious.

Magical Paint Cleaner.—Provide a plate with some of the best whiting to be had, and have ready some clean warm water and a piece of flannel, which dip into the water and squeeze nearly dry; then take as much whiting as will adhere to it, apply it to the painted surface, when a little rubbing will instantly remove any dirt or grease. After which wash the part well with clean water, rubbing it dry with a soft chamois. Paint thus cleaned looks as well as when first laid on, without any injury to the most delicate colors. It is far better than using soap, and does not require more than half the time and labor.

Captain Vine Hall's Remedy for Love of Strong Drink.—Sulphate of iron, five grains ; peppermint water, eleven drachms ; spirit of nutmeg, one drachm. To be taken twice a day in doses of about a wine-glassful or less, with or without water. This recipe is not only an inestimable boon to the victim of strong drink, but properly "pushed" is capable of yielding a handsome income from its manufacture. This remedy is prepared by different persons under different titles, and sold at from \$1 to \$5 per bottle.

Excelsior Axle Grease.—Take one part good plumbago (black lead) sifted through a coarse muslin so as to be perfectly free from grit, and stir it into five quarts of lard, warmed so as to be stirred easily without melting. Stir vigorously until it is smooth and uniform. Then raise the heat until the mixture melts. Stir constantly, remove from the fire, and keep stirring until cold. Apply cold to the axle or any other bearing with a brush. If intended for use where the axle or bearing is in a warm apartment, as the interior of mills, etc., two ounces of hard tallow or one ounce of beeswax, may be used to every ten pounds of the mixture. This grease is cheaper in use than oil, tallow or tar, or any compound of them, and can be sold at a good profit in any thickly settled country.

Royal British Washing Powder, Hard Water Made Soft.—The Laundresses' Assistant, warranted not to injure the finest fabric. No acid, no potash. In the wash room it saves time, labor, expense, muscle, temper and hands. The clothes will come out clean and white, without wear or tear, or rubbing on wash-boards, therefore will last twice as long. For house cleaning it is unequaled. One girl can wash more clothes, paint, walls, windows or floors in a day with perfect ease, with this powder, than she could in four days with hard labor, soap and scrubbing brush; and the paint will look new and bright. It only requires to be tested to be appreciated. If it does not give satisfaction, we will refund the money.

RECIPE.—Mix any quantity of soda ash with an equal portion of carbonate of soda, (ordinary soda) crushed into coarse grains. Have a thin solution of glue, or decoction of linseed oil ready, into which pour the soda until quite thick. Spread it out on boards in a warm apartment to dry. As soon as dry, shake up well so that it will pack easily into nice square packages. Label neatly. Pound packages ought not to cost over seven cents, ready for market; these retail readily for thirty-five cents.

Imperial Fly Paper, or "Catch 'Em Alive Oh!"—You must take linseed oil, no other will do, and put it into a strong iron pot. The pot must be third full only, and must have a lid that fits closely. You bring the oil to

a boil and then set fire to it on top as well. This operation can only be carried on out doors. When it has been afire about forty minutes put on the lid to quench it and then take a little out on a stick and cool it to see whether it is thick enough. If not boil and burn again twenty minutes more, and so on until it is thick enough. Some oil requires long as four or five hours, some longer yet and some less. When of the right consistency, about like thick New Orleans molasses, it can be brushed on stout manilla (brown) paper. When rightly made it will remain sticky for six months. It can be made cheaper and quicker if some common rosin, cracked up into coarse powder, is put into it (one pound rosin to a gallon of oil) but it dries up quicker; still this kind is good enough for general use. The sheets of paper should be about the size of letter paper and with a crease in the middle, and when covered with the compound should be folded so that the covered parts come together. They can then be packed and carried without injury to anything else. When wanted they can be easily pulled apart. The sheets are a ready sale at five cents apiece. Two hundred and fifty can be made from one gallon of linseed oil which costs about one dollar, the paper costs about eighty cents, it ought to be good and strong and the boiling would bring the cost to about a cent a sheet. Mine costs me rather less, but I make it in larger quantities.

Great English Harness Blacking.—

Three ounces turpentine, two ounces white wax, to be dissolved together over a slow fire; then add one ounce of ivory-black and one drachm of indigo, to be well pulverized and mixed together. When the wax and the turpentine are dissolved, add the ivory-black and the indigo, and stir till cold. Apply very thin; brush afterward, and it will give a beautiful polish. This blacking keeps the leather soft, and, properly applied, gives a good polish. It is excellent for buggy tops, harness, etc. Old harness, if hard may be washed in warm water, and when nearly dry, grease it with neatsfoot oil.

Fire Kindlers.—To make very nice fire kindlers, take resin any quantity, and melt it, putting in for each pound being used, from two to three ounces of tallow, and when all is hot, stir in pine sawdust to make very thick; and, while yet hot, spread it out about one inch thick, upon boards which have fine sawdust sprinkled upon them, to prevent it from sticking. When cold, break up into lumps about one inch square. But if for sale, take a thin board and press upon it, while yet warm, to lay it off into inch squares; this makes it break regularly, if you press the crease sufficiently deep, grease the marked board to prevent it from sticking.

To Keep Cider sweet, and Sweeten Sour Cider.—To keep cider perfect, take a keg and bore holes in the bottom of it; spread a piece of woollen cloth at the

bottom: then fill with clean sand closely packed; draw your cider from a barrel just as fast as it will run through the sand; after this, put in clean barrels which have had a piece of cotton or linen cloth two by seven inches dipped in melted sulphur and burned inside of them, thereby absorbing the sulphur fume (this process will also sweeten sour cider); then keep it in a cellar or room where there is no fire, and add half pound white mustard seed to each barrel. If the cider is long made, or souring when you get it, about one quart of hickory ashes (or a little more of other hard wood ashes) stirred into each barrel will sweeten and clarify it nearly equal to rectifying it as above; but if it is not rectified, it must be racked off to get clear of the pomace, as with this in it, it will sour. Oil or whiskey barrels are best to put cider in, or half pint sweet oil to a barrel, or a gallon of whiskey to a barrel, or both, may be added with decidedly good effects; isinglass, four ounces to each barrel, helps to clarify and settle cider that is not to be rectified,

Liquid Blacking.—Ivory black two pounds; molasses, two pounds; sweet oil, one pound; rub together till well mixed; then add oil vitrol, three quarters of a pound; add coarse sugar, half pound; and dilute with beer bottoms; this can not be excelled.

Hunter's Secrets and Private Guide to Trappers.—The following secret applies to all animals, as every animal is attracted by the peculiar odor in a greater or less degree, but it is best adapted to land animals, such as foxes, minks, sables, martens, wolves, bears, wild-cats, etc., etc. Take one half pound strained honey, one quarter drachm oil of lavender, and four pounds of tallow, mix the whole thoroughly together, and make it into forty pills, or balls, and place one of these pills under the pan of each trap when setting it. The above preparation will most wonderfully attract all kinds of animals, and trappers and others who use it will be sure of success.

To CATCH FOXES.—Take oil of amber, and beaver's oil, each equal parts, and rub them over the trap before setting it. Set in the usual way.

To CATCH MINK.—Take oil of amber, and beaver's oil, and rub over the trap. Bait with fish or birds.

To CATCH MUSKRATS.—In the female muskrat near the vagina, is a small bag which holds from 30 to 40 drops. Now all the trapper has to do is to procure a few female muskrats and squeeze the contents of a bag into a vial. Now when in quest of muskrats, sprinkle a few drops of the liquid on the bushes over and around the trap. This will attract the male muskrats in large numbers, and if the traps are properly arranged, large numbers of them may be taken. In trapping muskrats steel traps should be used, and they should be set in the paths and

runs of the animals, where they come upon the banks, and in every case the trap should be set under the water, and carefully concealed ; and care should be taken that it has sufficient length of chain to enable the animals to reach the water after being caught, otherwise they are liable to escape by tearing or gnawing off their legs.

TO CATCH BEAVER.—In trapping for beaver, set the trap at the edge of the water or dam, at the point where the animals pass from deep to shoal water, and always beneath the surface, and fasten it by means of a stout chain to a picket driven in the bank, or to a bush or tree. A flat stick should be made fast to the trap by a cord a few feet long, which, if the animal chanced to carry away the trap, would float on the water, and point out its position. The trap should then be baited with the following preparation, called the "Beaver Medicine." This is prepared from a substance called castor, and is obtained from the glandulous pouches of the *male* animal. The contents of five or six of these castor bags are mixed with a nutmeg, twelve or fifteen cloves, and thirty grains of cinnamon in fine powder, and the whole well stirred together with as much whiskey as will give it the consistency of mixed mustard. This preparation must be left closely corked up, and in four or five days the odor becomes powerful ; and this medicine smeared upon the bits of wood, etc., with which the traps are baited, will attract the beaver from a great distance, and wishing to make a close inspection, the animal puts its legs into the trap and is caught.

The same caution in regard to length of chain should be observed for beaver as for otters, muskrats, etc., for unless they can reach the water they are liable to get out of the trap and escape.

Apple Butter without Apples.—Take one-half pint of the very cheapest black molasses (good molasses won't do) and one-half pint of good vinegar, mix well together, put it over the fire until it boils, then take it off, and take one-eighth pint of wheat flour and cold water enough to make a thin batter, and mix well ; then pour all these together, and boil until it gets as thick as you want it. Stir all the time. Put in cinnamon or allspice to suit your taste. You will then have splendid apple butter.

How to Make Old Orchards New.—**KAINITE, OR TREE MEDICINE.**—It is very well known that the reason why peach, apple, quince and pear orchards gradually grow poorer and poorer until they cease to produce at all, is because the potash is exhausted from the soil by the plant. This potash must be restored, and the most effective way to do it is to use the following compound, discovered by a distinguished German chemist : Thirty parts of sulphate of potash ; fifteen parts sulphate of magnesia ; thirty-five parts salt ; fifteen parts gypsum

(plaster-of-paris) ; five parts chloride of magnesia. This should be roughly powdered and mixed and then mingled with barn-yard manure, or dug in about the roots of the trees. From ten to twenty pounds to a tree are quite enough.

How to Keep Apples Fresh and Sound all Winter.—I discovered a very superior way of preserving apples until spring. By it any apple in good condition when packed will be equally good when unpacked, and even those rotting because not in good condition when put away will not injure any others. Take fine dry sawdust, preferably that made by a circular saw from well seasoned hard wood, and place a thick layer on bottom of a barrel. Then place a layer of apples, not close together and not close to staves of the barrel. Put sawdust liberally over and around, and proceed until a bushel and a half (or less) are so packed in each barrel. They are to be kept in a cool place. I kept some in an open garret, the thermometer for a week ranged close to zero. No bruised or mellow apples will be preserved, but they will not communicate rot to their companions. There is money in this, applied to choice apples.

Art of Rat Killing without Traps or Poison.—Take common sponge, dried, cut into small pieces, soak in lard, melted tallow or meat gravy. Place these pieces within easy access to the rats. They will eat greedily, and the moisture of the stomach will cause the pieces to swell and kill the rat. Water may be placed within reach, and will hasten results by expanding the sponge.

I. X. L. Baking Powder.—Many large fortunes have been made in this country and England by the manufacture and sale of baking powders. These powders are specially well adapted to all the western parts of our country, where people must bake often in a hurry, and always without the means that are to be had in the east; and notwithstanding the many objections raised against the use of anything but yeast as a rising, these powders, if properly made, are perfectly wholesome. It only requires that the powders should be made of pure material, exactly as laid down in the recipe. It is very true that the competition as to price tempts manufacturers to cheapen the stuff in their powders until the bread baked from them tastes as if it were made of soap. But a good article will acquire a reputation which will secure it a steady and profitable sale.

RECIPE.—Take 1 pound tartaric acid in crystals, $1\frac{1}{2}$ pounds of bi-carbonate of soda and $1\frac{1}{2}$ pounds of potato starch. Each must be powdered separately, well dried by a slow heat, well mixed through a sieve. Pack hard in tinfoil, tin or paper glazed on the outside. The tartaric acid and bi-carbonate of soda can of course be bought cheaper of wholesale druggists than you can make them unless you are doing things on a very large

scale, but potato starch any one can make ; it is only necessary to peel the potatoes and to grate them up fine into vessels of water, to let them settle, pour off the water and make the settlings in balls and to dry them. With these directions any one can make as good a baking powder as is sold anywhere ; if he wants to make it very cheap, he can take *cream of tartar* and common washing (carbonate) of soda, instead of the articles named in the recipe, but this would be advisable only where customers insist on excessively low prices in preference to quality of goods.

To Make Maple Sugar without Maple Trees.—Though the secret I am about to reveal may seem very simple (when explained), I believe there are few who would discover it of their own accord. The value of the maple sugar crop is considerable, and there is ready sale for all that can be made. I was led by curiosity to boil down a little butternut sap one time with an equal quantity of maple sap, and the result was, a sugar which I could not distinguish from pure maple. I experimented further, and found that if a little common (cane) sugar was added to the sap of the butternut it, would do as well as and addition of maple sap. I found that the sap, of birch and several other trees would also make, when a very little cane sugar was added, a sugar which in looks and taste exactly resembled maple. To be able to make "maple" sugar from trees not heretofore deemed valuable for the purpose is just so much clear profit.

Ginger Wine.—Water, ten gallons; lump sugar twenty pounds; bruised ginger, eight ounces; three or four eggs. Boil well and skim; then pour hot on six or seven lemons cut in slices, macerate for two hours; then rack and ferment; next add spirit two quarts, and afterward finings, one pint; rummage well. To make the color, boil half ounce saleratus and half ounce alum in one pint of water till you get a bright red color.

Ginger Beer.—Take five an half gallons water, three quarters of a pound ginger root bruised, tartaric acid, half ounce; white sugar, two an half pounds; whites of three eggs well beaten, ten small teaspoonfuls of lemon essence; yeast, one gill; boil the root for thirty minutes in one gallon of the water; strain off, and put the essence in while hot; mix, make over night; in the morning, skim and bottle, keeping out the sediments.

Cider without Apples.—Water one gallon; common sugar, one pound; tartaric acid, half ounce; yeast, one tablespoonful; shake well, make in the evening, and it will be fit to use next day.

For Bottling.—Put in a barrel, five gallons hot water; thirty pounds common sugar; three quarters pound tartaric acid; twenty-five gallons of cold water; three pints of hop or brewers' yeast, worked into paste with one pint of water and one pound

flour. Let it work in the barrel forty-eight hours, the yeast running out of the bunghole all the time, putting in a little sweetened water occasionally to keep it full; then bottle, putting in two or three broken raisins to each bottle; and it will nearly equal champagne.

Cheap Cider.—Put in a cask five gallons hot water; fifteen pounds brown sugar; one gallon molasses; half gallon hop or brewers' yeast; good vinegar, six quarts; stir well, add twenty-five gallons cold water, ferment as the last.

Another Cider.—Cold water, twenty gallons; brown sugar, fifteen pounds; tartaric acid, half pound; rummage well together, and add, if you have them, three or four pounds of dried sour apples, or boil them and pour in the expressed juice. This cider will keep longer than the others.

Spruce and Ginger Beer.—Cold water, ten gallons; boiling water, eleven gallons; mix in a barrel; add molasses, thirty pounds, or brown sugar, twenty-four pounds; oil of spruce or any oil of which you wish the flavor, one ounce; add one pint yeast, ferment, bottle in two or three days. If you wish white spruce beer, use lump sugar; for ginger flavor, use seventeen ounces ginger root bruised, and a few hops; boil for thirty minutes in three gallons of the water, strain and mix well; let it stand two hours and bottle, using yeast, of course, as before.

Hop Beer, very Fine.—Mix fourteen pounds of molasses and eleven gallons water well together, and boil them for two hours with six ounces hops. When quite cool, add a cupful of yeast, and stir it well by a gallon or two at a time. Let it ferment for sixteen hours, in a tub covered with a sack, then put it in a nine-gallon cask, and keep it filled up; bung it down in two days, and in seven days it will be fit to drink, and will be stronger than London porter.

Lemon Beer.—To make twenty gallons, boil six ounces of ginger root bruised, quarter pound cream of tartar, for twenty or thirty minutes, in two or three gallons of water; this will be strained in thirteen pounds coffee sugar, on which you have put half an ounce oil of lemon, and six good lemons squeezed up together, having warm water enough to make the whole twenty gallons just so hot that you can hold your hand in it without burning, or about seventy degrees of heat; put in one and a half pints of hop or brewers' yeast worked into paste with five or six ounces flour. Let it work over night, then strain and bottle for use.

Hop Beer.—Hops six ounces; molasses five quarts; boil the hops till the strength is out, strain them into a thirty-gallon barrel; add the molasses and one teacupful of yeast and fill up with water; shake it well, and leave the bung out till fermented

which will be in about twenty-four hours. Bung up, and it will be fit for use in about three days.

Molasses Beer.—Hops one ounce; water one gallon; boil for ten minutes, strain, add molasses, one pound; and when luke-warm, yeast, one spoonful. Ferment.

Root Beer.—Water ten gallons, heat to sixty degrees Fahrenheit, then add three gallons of molasses; let it stand two hours, pour it into a bowl add powdered or bruised sassafras and wintergreen bark, of each half pound; yeast one pint; bruised sarsaparilla root, half pound; add water enough to make twenty-five gallons in all. Ferment for twelve hours, then bottle.

Ottawa Beer, and Ginger Ale.—Ottawa beer is made by using eight ounces of a fluid extract which contains the concentrated strength of four pounds of thirteen different roots and barks, added to one gallon of syrup which is mixed with fourteen gallons water, into which carbonic acid gas is forced at a pressure of eighty pounds to the square inch. *Ginger Ale* is made in the same way except that four ounces of extract is sufficient. When the ginger is really used, an extract deprived of resinous impurities is made use of, which gives a clear amber colored drink.

Soda Syrups.—Loaf or crushed sugar, eight pounds; pure water, one gallon; gum-arabic, two ounces; mix in a brass or copper kettle. Boil until the gum is dissolved, then skim and strain through white flannel, after which add tartaric acid, five and a half ounces; dissolve in hot water; to flavor, use extract of lemon, orange, vanilla, rose, sarsaparilla, strawberry, etc., etc., half ounce, or to your taste. If you use juice of lemon, add two and a half pounds of sugar to a pint, you do not need any tartaric acid with it; now use two tablespoonfuls of syrup to three quarters of a tumbler of water, and one third teaspoonful of super-carbonate of soda, made fine; drink quick. For soda fountains, one ounce of super-carbonate of soda is used to one gallon of water. For charged fountains no acids are needed in the syrups.

Blackberry Wine.—Wash the berries and pour one quart of boiling water to each gallon. Let the mixture stand twenty-four hours, stirring occasionally; then strain and measure into a keg, adding two pounds sugar, and good rye whiskey one pint, or best alcohol, one half pint to each gallon. Cork tight and put away for use. The best wine that can be made.

Superior Raisin Wine.—Take thirty pounds of chopped raisins free from stems and dust; put them in a large keg, add to them ten gallons soft water; let them stand two weeks unbunged, shaking occasionally (warm place in winter), then strain through woolen, or filter; color with burnt sugar; bottle and cork well for use. The more raisins the better the wine, not exceeding five pounds to each gallon.

Raisin Wine, Equal to Sherry.—Boil the proper quantity of water and let it stand till cold. To each gallon of this add four pounds of chopped raisins, previously well washed, and freed from stalks; let the whole stand for one month, stirring frequently; then remove the raising, and bung up closely for one month more; then rack into another vessel, leaving all sediment behind, and repeat till it becomes fine; then to every ten gallons add six pounds of fine sugar and one dozen of good oranges, the rinds being pared thin and infused in two quarts of brandy, which should be added to the liquor at its last racking. Let the whole stand three months in the cask, then bottle. It should remain bottled twelve months. To give it the flavor of Madeira, when it is in the cask put in a couple of green citrons, and let them remain till the wine is bottled.

American Champagne.—Good cider (crab apple cider is the best), seven gallons; best fourth-proof brandy, one quart; genuine champagne wine, five pints; milk, one gallon; bitartrate of potassa, two ounces. Mix, let stand a short time, bottle while fermenting. An excellent imitation.

British Champagne.—Loaf sugar, fifty-six pounds; brown sugar (pale), forty-eight pounds; water (warm), forty-five gallons; white tartar, four ounces; mix, and at a proper temperature add yeast, one quart; and afterward sweet cider, five gallons; bruised wild cherries fourteen or fifteen ounces; pale spirits, one gallon; orris powder, one half ounce; bottle while fermenting.

London Sherry.—Chopped raisins, four hundred pounds; soft water, one hundred gallons; sugar, forty-five pounds; white tartar, one pound; cider, sixteen gallons. Let them stand together in a close vessel one month; stir frequently. Then add of spirits eight gallons; wild cherries bruised, eight pounds. Let them stand one month longer, and fine with isinglass.

Ginger Wine.—Put one ounce of good ginger root bruised in one quart ninety-five per cent alcohol; let it stand nine days and strain; add four quarts water, and one pound white sugar dissolved in hot water, color with tincture of sanders to suit.

Caramel is made by boiling clarified sugar till it is very brittle, then pouring it on an oiled slab or sheet of tin, and as soon as it is cool enough to receive an impression with the finger, stamping it in small squares, about an inch in size, with a caramel mould; then turning over the mass, wiping the bottom to remove any oil that may have adhered from the slab, and putting it in a dry place to harden. If you have no caramel mould, you may score it on the slab with a common case knife, after which they are glazed with another coating of sugar. Keep them tightly closed from the air after they are made.

Lemon Caramel is made by grating the yellow rind of a lemon with a lump of sugar; add to this a few drops of lemon juice, with water enough to dissolve the sugar completely, and stir the whole into the boiled syrup a few minutes before it is taken from the fire. *Orange* and *Lime* caramels are prepared in the same manner from these respective fruits. *Coffee caramel*, coffee two ounces, sugar one pound. Make an infusion of the coffee, using as little water as possible; strain it through a cloth, and stir it gradually into the boiled syrup a few minutes before taking it from the fire. *Chocolate caramel*, chocolate four ounces, sugar one pound. Dissolve the chocolate in as little water as possible, and add it to the boiled sugar, as in the coffee caramels. *Vanilla* and *Orange cream caramels* are made by using the respective essences of these fruits.

Powerful Cement for Broken Marble.—Take gum arabic, one pound; make into a thick mucilage; add to it powdered plaster of Paris, one and a half pound; sifted quick lime, five ounces; mix well; heat the marble and apply the mixture,

Trappers' and Anglers' Secret for Game and Fish.—A few drops of oil of anise or oil of rhodium, on any trapper's bait, will entice any wild animal into the snare trap. India cockle mixed with flour dough, and sprinkled on the surface of still water, will intoxicate fish, rendering them insensible; when coming up to the surface they can be lifted in a tub of fresh water to revive them, when they may be used without fear. Fish may also be caught in large numbers during the winter season by watching them through the ice, and striking it with a mallet directly over where they happen to be. The shock stuns them, and they will rise, belly upward, toward the surface, when they are easily secured by breaking a hole in the ice.

To Repair the Silvering of Mirrors.—Pour upon a sheet of tin foil three drachms of quicksilver to the square foot of foil. Rub smartly with a piece of buckskin until the foil becomes brilliant. Lay the glass upon a flat table, face downward, place the foil upon the damaged portion of the glass, lay a sheet of paper over the foil, and place upon it a block of wood or a piece of marble with a perfectly flat surface, put upon it sufficient weight to press it down tight; let it remain in this position a few hours. The foil will adhere to the glass.

To Clean Marble.—Take two parts of common soda, one part pumice-stone, and one part of finely powdered chalk, sift it through a fine sieve and mix it with water; then rub it well all over the marble, and the stains will be removed; then wash the marble over with soap and water, and it will be as clean as it was at first.

Silver Polish Kalsomine.—Take seven pounds of Paris white and a quarter of a pound of light-colored glue. Set the glue in a tin vessel containing three pints of water, let it stand over night to soak, then put it in a kettle of boiling water over the fire, stirring till it is well dissolved and quite thin. Then, after putting the Paris white into a large water pail, pour on hot water and stir till it appears like thick milk. Now mingle the glue liquid with the whiting, stir it thoroughly and apply with a whitewash brush or a large paint brush.

Best Wash for Barns and Houses.—Water lime, one peck; freshly slaked lime, one peck; yellow ochre in powder, four pounds; burnt umber, four pounds. To be dissolved in hot water and applied with a brush.

Durable Outside Paint.—Take two parts (in bulk) of water lime, ground fine; one part (in bulk) of white lead, in oil. Mix them thoroughly, by adding best boiled linseed oil enough to prepare it to pass through a paint-mill; after which, temper with oil till it can be applied with a common paint-brush. Make any color to suit. It will last three times as long as lead paint. IT IS SUPERIOR.

Premium Paint without Oil or Lead.—Slake stone-lime with boiling water in a tub or barrel to keep in the steam; then pass six quarts through a fine sieve. Now to this quantity add one quart of coarse salt and a gallon of water; boil the mixture, and skim it clear. To every five gallons of this skimmed mixture add one pound alum; one-half pound copperas; and by slow degrees three-quarters pound potash, and four quarts sifted ashes or fine sand; add any coloring desired. A more durable paint was never made.

Paris Green.—Take unslaked lime of the best quality, slake it with hot water; then take the finest part of the powder, and add alum water as strong as it can be made, sufficient to form a thick paste; then color it with bichromate of potash and sulphate of copper until the color suits your fancy, and dry it for use. N. B.—The sulphate of copper gives a blue tinge; the bichromate of potash a yellow. Observe this, and you will get it right.

To Harden Whitewash.—To one-half pail of common whitewash add one-half pint of flour. Pour on boiling water in quantity to thicken it. Then add six gallons of the lime water, and stir well.

Whitewash that will not Rub off.—Mix up half a painful of lime and water, ready to put on the wall; then take one quarter pint flour, mix it up with water; then pour on it boiling water, a sufficient quantity to thicken it; then pour it while hot into the whitewash, stir it all together, and it is ready for use.

Farmer's Paint.—Farmers will find the following profitable for house or fence paint: Skim milk, two quarts; fresh slaked lime, eight ounces; linseed oil, six ounces; white Burgundy pitch, two ounces; Spanish white, three pounds. The lime is to be slaked in water, exposed to the air, and then mixed with about one-fourth of the milk; the oil in which the pitch is dissolved to be added a little at a time, then the rest of the milk, and afterward the Spanish white. This is sufficient for twenty-seven yards, two coats. This is for white paint. If desirable, any other color may be produced; thus, if a cream color is desired, in place of the part of Spanish white use the other alone.

Beautiful Green Paint for Walls.—Take four pounds Roman vitriol, and pour on it a tea-kettleful of boiling water. When dissolved add two pounds pearlash, and stir the mixture well with a stick until the effervescence ceases; then add one-quarter pound pulverized yellow arsenic, and stir the whole together. Lay it on with a paint brush; and if the wall has not been painted before, two or even three coats will be requisite. If a pea-green is required, put in less, if an apple-green, more of the yellow arsenic. This paint does not cost the quarter of oil paint, and looks better.

Blue Color for Ceilings, etc.—Boil slowly for three hours one pound blue vitriol and one-half pound of the best whiting in about three quarts water; stir it frequently while boiling, and also on taking it off the fire. When it has stood till quite cold, pour off the blue liquid, then mix the cake of color with good size, and use it with a plasterer's brush in the same manner as whitewash, either for walls or ceilings.

Artificial Gold.—This is a new metallic alloy which is now very extensively used in France as a substitute for gold. Pure copper, one hundred parts; zinc, or, preferably, tin, seventeen parts; magnesia, six parts; sal-ammoniac, three-sixths parts; quick-lime, one-eighth part; tartar of commerce, nine parts; are mixed as follows: The copper is first melted, and the magnesia, sal-ammoniac, lime and tartar are then added separately, and by degrees, in the form of powder; the whole is now briskly stirred for about a half an hour, so as to mix thoroughly; and when the zinc is added in small grains by throwing it on the surface, and stirring till it is entirely fused; the crucible is then covered, and the fusion maintained for about thirty-five minutes. The surface is then skimmed, and the alloy is ready for casting. It has a fine grain, is malleable, and takes a splendid polish. It does not corrode readily, and for many purposes is an excellent substitute for gold. When tarnished, its brilliancy can be restored by a little acidulated water. If tin be employed instead of zinc, the alloy will be more brilliant. It is very much used in France, and must ultimately attain equal popularity here.

To Solder Tortoise Shell.—Bring the edges of the pieces of shell to fit each other, observing to give the same inclination of grain to each, then secure them in a piece of paper, and place them between hot irons or pincers ; apply pressure, and let them cool. The heat must not be so great as to *burn* the shell, therefore try it first on a white piece of paper.

To take a Plaster of Paris Cast from a Person's Face.—The person must lie on his back, and his hair be tied behind ; into each nostril put a conical piece of paper, open at each end, to allow of breathing. The face is to be lightly oiled over, and the plaster, being properly prepared, is to be poured over the face, taking particular care that the eyes are shut, till it is a quarter of an inch thick. In a few minutes the plaster may be removed. In this a mould is to be formed, from which a second cast is to be taken, that will furnish casts exactly like the original.

Nickel Plating.—The following is the substance of the patent granted to Dr. Isaac Adams, March 22, 1870. The process is highly successful. "This improvement consists in the use of three new solutions from which to deposit nickel by the electric current. 1. A solution formed of the double sulphate of nickel and alumina, or the sulphate of nickel dissolved in a solution of soda, potash, or alumina alum, the three different varieties of commercial alum. 2. A solution formed of the double sulphate of nickel and magnesia, with or without an excess of ammonia. I have found that a good coating of nickel can be deposited from the solution before mentioned, provided they are prepared and used in such a manner as to be free from any acid or alkaline reaction. When these solutions are used, great care must be taken, lest by the use of too high battery power, or from the introduction of some foreign matters, the solution becomes acid or alkaline. I prefer to use these solutions at a temperature above one hundred degrees Fahrenheit, but do not limit my invention to the use of these solutions at that temperature. I therefore claim, 1. The electro deposition of nickel by the means of solution of the double sulphate of nickel and alumina prepared and used in such a manner as to be free from the presence of ammonia, potash, soda, lime or nitric acid, or from any other acid, or from any acid or alkaline reaction. 2. The electro deposition of nickel by means of a solution of the double sulphate of nickel and potash, prepared and used in such a manner as to be free from the presence of ammonia, soda, alumina, lime or nitric acid, or from any acid or alkaline reaction. 3. The electro deposition of nickel by means of a solution of the double sulphate of nickel and magnesia, prepared and used in such a manner as to be free from the presence of potash, soda, alumina, lime or nitric acid, or from any acid or alkaline reaction."

Silver-Plating Fluid.—Dissolve one ounce of nitrate of silver, in crystals, in twelve ounces of soft water; then dissolve in the water two ounces cyanuret of potash; shake the whole together, and let it stand till it becomes clear. Have ready some half-ounce vials, and fill half full of Paris white, or fine whiting; and then fill up the bottles with the liquor, and it is ready for use. The whiting does not increase the coating powder; it only helps to clean the articles, and save the silver fluid, by half filling the bottles.

To make Silver Solution for Electro-Plating.—Put together into a glass one ounce good silver, made thin and cut into strips; two ounces best nitric acid, and one half-ounce pure rain-water. If solution does not begin at once, add a little more water—continue to add a very little at a time until it does. In the event it starts off well, but stops before the silver is fully dissolved, you may generally start it up again all right by adding a little more water. When solution is entirely effected, add one quart of warm rain-water and a large table-spoonful of table salt. Shake well and let settle, then proceed to pour off and wash through other waters as in the case of the gold preparation. When no longer acid to the taste, put in an ounce and an eighth cyanuret potassa and a quart pure rain-water; after standing about twenty-four hours it will be ready for use.

Cement for Petroleum Lamps.—Boil three parts of resin with one part of caustic soda and five of water. The composition is then mixed with half its weight of plaster of Paris, and sets firmly in one-half to three-quarters of an hour. It is of great adhesive power, not permeable to petroleum, a low conductor of heat, and but superficially attacked by hot water.

To make and apply Gold-Plating Powder.—Prepare a chloride of gold the same as for plating with a battery. Add to it, when thoroughly washed out, cyanuret potassa in a proportion of two ounces to five penny-weights of gold. Pour in a pint of clear rain-water, shake up well, and then let stand till the chloride is dissolved. Add then one pound of prepared Spanish whiting, and then let it evaporate in the open air till dry, after which put away in a tight vessel for use. To apply it you prepare the article in the usual way, and, having made the powder into a paste with water, rub it upon the surface with a piece of chamois-skin and cotton flannel.

An old mode of making a gold-plating powder was to dip clean linen rags into solution prepared as in the second article preceding this, and having dried, to fire and burn them into ashes. The ashes formed the powder, and were to be applied as above.

To make Gold Solution for Electro-Plating.—Dissolve five pennyweights gold coin, five grains pure copper, and four grains pure silver in three ounces nitromuriatic acid, which is simply two parts muriatic acid and one part nitric acid. The silver will not be taken into solution as are the other two metals, but will gather at the bottom of the vessel. Add one ounce pulverized sulphate of iron, one half ounce pulverized borax, twenty-five grains pure table salt, and one quart hot rain water. Upon this the gold and copper will be thrown to the bottom of the vessel with the silver. Let stand till fully settled, then pour off the liquor very carefully, and refill with boiling rain-water as before. Continue to repeat this operation until the precipitate is thoroughly washed; or, in other words, fill up, let settle, and pour off so long as the accumulation at the bottom of the vessel is acid to the taste. You now have about an eighteen carat chloride of gold. Add to it an ounce and an eighth cyanuret potassa, and one quart rain-water—the latter heated to the boiling point. Shake up well, then let stand about twenty-four hours, and it will be ready for use. Some use platina as an alloy instead of silver, under the impression that plating done with it is harder. I have used both but never could see much difference. Solution for a darker colored plate to imitate Guinea gold may be made by adding to the above one ounce dragon's blood and five grains iodide of iron. If you desire an alloyed plate, proceed as first directed, without the silver or copper, and with an ounce and a half of sulphuret potassa in place of the iron, borax, and salt.

To Wash Silverware.—Never use a particle of soap on your silverware, as it dulls the lustre, giving the article more the appearance of pewter than silver. When it wants cleaning, rub it with a piece of soft leather and prepared chalk, the latter made into a kind of paste with pure water, for the reason that water not pure might contain gritty particles.

Best Cement for Aquaria.—One part, by measure, say a gill of litharge; one gill of plaster of Paris; one gill of dry white sand; one-third of a gill of finely powdered resin. Sift, and keep corked tight until required for use, when it is to be made into a putty by mixing in boiled oil (linseed) with a little patent drier added. Never use it after it has been mixed (that is, with the oil) over fifteen hours. This cement can be used for marine as well as fresh water aquaria, as it resists the action of salt water. The tank can be used immediately, but it is best to give it three or four hours to dry.

French Putty.—Seven pounds linseed oil and four pounds brown umber are boiled for two hours, and sixty-two grammes wax stirred in. After removal from the fire five and a half pounds fine chalk and eleven pounds white lead are added and thoroughly incorporated; said to be very hard and permanent.

Glue for Labelling on Metals.—Boiling water, one quart; pulverized borax, two ounces; gum shellac, four ounces. Boil till dissolved. Used for attaching labels to metals, or it will do to write inscriptions with, and dust or dab on a little bronze powder over it, varnishing over the bronze.

Fire and Waterproof Glue.—Mix a handful of quick-lime with four ounces of linseed oil; thoroughly lixivate the mixture; boil it to a good thickness, and spread it on thin plates in the shade; it will become very hard, but can be dissolved over a fire, like common glue, and is then fit for use.

Prepared Liquid Glue.—Take of best white glue sixteen ounces; white lead, dry, four ounces; rain-water, two pints; alcohol, four ounces. With constant stirring dissolve the glue and lead in the water, by means of a water-bath. Add the alcohol, and continue the heat for a few minutes. Lastly, pour into bottles while it is still hot.

To make Iron take a Bright Polish like Steel.—Pulverize and dissolve the following articles in one quart of hot water: Blue vitriol, one ounce; borax, one ounce; prussiate of potash, one ounce; charcoal, one ounce; salt, one-half pint, then add one gallon of linseed oil, mix well, bring your iron or steel to the proper heat and cool in the solution. It is said the manufacturers of the Judson governor paid \$100 for this receipt, the object being to case harden iron so that it would take a bright polish like steel.

Hardening and Filling for Fire-proof Safes.—Experience has shown that the fire and burglar-proof diamond chill for iron or steel has no superior as a hardening for security in the construction of safes; and as a non-conductor of heat, we would recommend a filling of plaster of Paris or alum. It is claimed by some that a mixture of both of these articles forms the best known filling for safes, as an external application of heat is certain to liberate a large quantity of water, which is transformed into steam, thus insuring entire safety to the contents of the safe. Other manufacturers employ a concrete filling for safes, and extol it very highly. Mr. Moffat, gas and steam fitter, Boston, has informed me that he has applied for protection in the matter of a discovery by which he claims that he can fully protect a safe against a double-blast furnace heat, by means of an outside lining of bricks composed of asbestos and kaolin, a very small portion of the latter material being used. From the well known incombustible nature of these materials, there can be no reasonable doubt that the claim in question is a just one.

To Write in Silver.—Mix one ounce of the finest pewter or block tin and two ounces of quicksilver together, till both become fluid, then grind it with gum water and write with it. The writing will then look as if done with silver.

Printers' Rollers.—No. 1 *Black Composition*, very durable and elastic. Genuine Irish or Buffalo glue, ten and a half pounds; black sugar-cane or best maple molasses, one gallon; purified india rubber shavings, one pound; Carolina tar, two ounces; glycerine, twelve ounces; strong vinegar, four ounces. Soak the glue over night and drain in the morning by means of a *covered* colander. Boil molasses and skim for twenty minutes. Add the rubber shavings and stir until it combines with the molasses, add the glue and boil six or seven minutes and pour. If purified rubber cannot be procured, add one and one-half pounds more glue and four ounces more glycerine. No. 1 glue, two pounds; Baeder's glue, two pounds; best sugar-house molasses, one gallon; glycerine, one-half pint. For *Winter* use, reduce each glue one-fourth to three-eighths of a pound. Soak the glues wrapped up separately in woollen cloths about three hours. Boil the molasses forty-five or fifty minutes, skimming thoroughly. Then add the glues drained of superfluous water. Boil the whole for fifteen or twenty minutes, add the glycerine, boil and stir three to five minutes, then pour off. No. 3 *Strong Middle Weather Rollers*. Temp. sixty to seventy degrees *Fahr*. Coopers best glue, eight and one-half pounds; extra syrup, two gallons; glycerine, one pint; Venice turpentine, two ounces. Steep the glue in rain water until pliant, and drain it well. Then melt it over a moderate fire, but do not "cook it." This will take from fifteen to twenty-five minutes. Next put in the syrup, and boil three-quarters of an hour, stirring it occasionally, and skimming off impurities arising to the surface. Add the glycerine and turpentine a few minutes before removing it from the fire, and pour slowly. Slightly reduce or increase the glue as the weather becomes colder or warmer.

To Transfer Prints, etc.—Take of gum sandrac four ounces; mastic, one ounce; Venice turpentine, one ounce; alcohol, fifteen ounces. Digest in a bottle, shaking frequently, and it is ready for use. Directions: Use, if possible, good plate glass of the size of the picture to be transferred, go over it with the above varnish, beginning at one side, press down the picture firmly and evenly as you proceed, so that no air can possibly lodge between; put aside, and let dry perfectly, then moisten the paper cautiously with water, and remove it piecemeal by rubbing carefully with the fingers; if managed nicely, a complete transfer of the picture to the glass will be effected.

Liquid Black Lead Polish.—Black lead, pulverized, one pound; turpentine, one gill; water, one gill; sugar one ounce.

Glue to resist Moisture.—Glue, five parts, resin, four parts, red ochre, two parts, mix with smallest possible quantity of water.

Instructions for Chinese Chromo-type, or Improved Photo-Chromatic Oil Painting.—This painting is done on common window glass, which must be cleaned thoroughly before using. The best way to clean glass is to dampen it with spirits of wine and polish with a piece of dry silk. Then take the picture that you wish to copy, and cut off the waste paper till you leave about an inch margin all around it, and then cut your glass to the exact size of the picture. Seeing that your glass is clear, apply a coat of Chinese varnish on one side, laying it on evenly and thick. Lay it away where it will be free from dust till it dries, which usually takes about six hours. If it is placed in the sun or near the fire, it will dry much quicker.

When ready to finish the picture, take the paint, or whatever it may be, and immerse it in the solution of color, face up, till it becomes thoroughly wet; then take it out and lay it on a sheet of paper, face up, in order that the face of the picture may dry and leave the other side damp. While your picture is drying, which usually takes from two to three minutes, according to the thickness of it, give the glass another coat of varnish on the same side. When the picture is dry, lay it on the glass, face down, and press it firmly, so as to exclude all air. If there is any air left it will show itself in white spots on the glass, and must be pressed out. Let it remain about five minutes, and then take a dry cloth, and rub away the back of the picture till you can see the outlines evenly and distinctly. After you have rubbed it to suit, give it a coat of Finishing Varnish and let it dry. When dry smooth it off with a piece of fine sand paper. then give it another coat of finishing varnish, let it dry, and place a piece of paper, any color you choose, on the back, and it is ready for framing. You may use warm water in place of the solution of color, but you must rub it off immediately.

If you are unable to procure the fir balsam, any transparent varnish will do instead.

The articles to be used are a flat camel's hair brush, about an inch wide, the Chinese varnish compound of fir balsam, two ounces; spirits turpentine, one ounce; mix well. Finishing varnish, fir balsam, spirits turpentine, spirits of wine, each an ounce; and solution for fixing the color, vinegar, four table-spoonsful, and water one quart.

The above recipe has been extensively sold at \$5, at which price one person alone is said to have cleared about seven thousand dollars on its sale.

American Commercial Ink.—Take one-quarter pound extract of logwood, one gallon clean soft water; heat it to the boiling point in a perfectly clean iron kettle; skim well, stir; then add ninety grains of bichromate of potash, fifteen grains prussiate of potash, dissolved in half a pint of hot water. Stir for three minutes; take off and strain.

Artificial Honey.—Take ten pounds good white (brown) sugar, three pounds soft water, two and one-half pounds bee bread honey, forty grains cream tartar, twelve drops oil of peppermint, three ounces gum arabic, one drop otto of rose, put them into a brass or copper kettle, and boil them for five minutes; then take two teaspoonsful of pulverized slippery elm, and mix with one pound of water; then strain it and mix it into the kettle; take it off and beat up the white of two eggs, and stir them in; let it stand two minutes, then skim it well, and when nearly cold add one pound of pure bees' honey, and so on for larger quantities.

This recipe has been sold for \$5 by several persons during the past six or eight years, who each, of course, claimed it as their own great discovery, asserting that it was patented, and under their sole control.

Ice Cream.—Have rich sweet cream and one-half pound loaf sugar to each quart of cream or milk. If you cannot get cream the best imitation is to boil a soft custard, six eggs to a quart of milk (eggs well beat). Or another is made as follows: Boil one quart of milk, and stir into it while boiling one tablespoonful of arrowroot wet with cold milk; when cold stir into it the yolk of one egg to give it a rich color. Five minutes boiling is enough for either plan. Put the sugar in after they cool. Keep the same proportion for any amount desired. Or thus: To six quarts milk add one-half pound Oswego corn starch, first dissolved. Put the starch in one quart of the milk; then mix together and simmer a little (not boil), sweeten and flavor to your taste—excellent. The juice of strawberries or raspberries gives a beautiful color and flavor to ice cream; or about one-half ounce essence or extract to one gallon, or to suit the taste. Have your ice well broken—one quart salt to a bucket of ice. About one-half hour's constant stirring, with occasional scraping down and beating together, will freeze it.

Stoughton Bitters.—Three-fourths of an ounce Peruvian bark, one ounce wild cherry bark, two ounces gentian root bruised, one ounce dried orange peel, one ounce cardamom seeds bruised; keep in one gallon spirits two or three weeks. Extensively sold for cocktails. Cures dyspepsia, etc.

Magnetic Ointment.—Elder bark, spikenard and yellow dock roots, of each one pound; boil in two gallons of water down to one; then press the strength out of the roots and boil the liquid down to half a gallon; add eight pounds of the best resin, one pound of beeswax and tallow enough to soften. Roll into rolls, and apply by warming and spreading on linen.

Fancy Soap.—Dissolve two ounces of Venice soap in two ounces of lemon juice; add one ounce oil of almonds and one ounce oil of tartar, mix and stir it till it has acquired the consistency of honey.

Rubber Hand Stamps.—Set up the desired name and address in common type, oil the type and place a guard about one-half inch high around the form; now mix plaster of Paris to the proper consistence, pour in and allow it to set. Have your vulcanized rubber all ready, as made in long strips three inches wide and one-eighth of an inch thick, cut off the size of the intended stamp, remove the plaster cast from the type, and place both the cast and the rubber in a screw press, applying sufficient heat to thoroughly soften the rubber, then turn down the screw hard, and let it remain until the rubber receives the exact impression of the cast and becomes cold, when it is removed, neatly trimmed with a sharp knife and cemented to the handle ready for use.

Approved Friction Matches.—About the best known preparation for friction matches is gum arabic, sixteen parts by weight; phosphorus, nine parts; nitre, fourteen parts; peroxyde of manganese, in powder, sixteen parts. The gum is first made into a mucilage with water, then the manganese, then the phosphorus, and the whole is heated to about 130 degrees Fahr. When the phosphorus is melted the nitre is added, and the whole is thoroughly stirred until the mass is a uniform paste. The wooden matches prepared first with sulphur are then dipped in this and afterward dried in the air. Friction papers, for carrying in the pocket, may be made in the same manner, and by adding benzoin to the mucilage they will have an agreeable odor when ignited.

To make and apply Gold-Plating Solution.—Dissolve one-half ounce of gold amalgam in one ounce of nitro-muriatic acid. Add two ounces of alcohol, and then, having brightened the article in the usual way, apply the solution with a soft brush. Rinse and dry in sawdust, or with tissue-paper, and polish up with chamois-skin.

Lavender Perfumed Water.—Two ounces oil garden lavender, one drachm essence ambergris, six drachms oil bergamot. Mix with two quarts and a pint proof spirits.

Florida Water.—Half-pint proof spirits, two drachms oil lemon, half drachm oil rosemary—mix.

Almond Soap.—Best white tallow soap, fifty pounds; essence of bitter almonds, twenty ounces; melt by the aid of a steam or water bath.

Cheap Waterproof Glue.—Melt common glue with the smallest possible quantity of water; add, by degrees, linseed oil, rendered drying by boiling it with litharge. While the oil is being added, the ingredients must be well stirred, to incorporate them thoroughly.

Buffalo Oil.—Take the best lard oil and perfume it well with equal parts of oil garden lavender and oil lemon.

Macassar Oil.—Olive oil, one pound; oil origanum, one drachm; oil rosemary, one scruple—mix.

HOW TO MAKE WINES, LIQUORS AND CORDIALS.

To Clear and Fine Liquors.—After all the articles used to prepare any kind of liquors are put in, and they do not become perfectly clear, you will draw into a barrel which has but one head or bottom in it, with a faucet near the bottom, and sift into each barrel from one to two ounces pulverized lime, which will cause every impurity to settle, when it can be drawn again and returned to clean barrels or bottles as desired. White Wines are generally fined by isinglass in the proportion of one and one-half ounce (dissolved in one and one-half pints of water and thinned with some of the wine) to the hogshead. Red Wines are generally fined with the whites of eggs, in the proportion of twelve to eighteen to each pipe; they must be well beaten to a froth, with about one pint of water, and afterwards mixed with a little of the wine before adding to the liquor. Rummage well.

Where spirits are mentioned, it signifies high wines rectified and reduced to hydrometer proof. Proof spirits signifies the same thing. Common whiskey is much below this proof, but a good substitute may be produced from rectified whiskey by depriving it of its taste and odor, by means of a process which renders it suitable for use. The whiskey should be of proper strength, and treated as follows (this process destroys the fusil oil, and precipitates the verdigris to the bottom):

To forty gallons whiskey add one and one-half pounds unslacked lime, three-fourths of a pound powdered alum, and one-half pint spirits of nitre; stir well and let stand twenty-four hours. Then draw off into another cask, avoiding the sediment. It is then fit for use. All oils used must be cut in 90 per cent. alcohol, using one quart alcohol to two ounces oil, and should stand twenty-four hours before using.

Coloring for Liquor.—Take one-half pound white sugar, put it into an iron kettle, moisten a little, let it boil and burn to a red, black and thick; remove from the fire, and put in a little hot water to prevent it hardening as it cools. Use this to color any liquors needing color, to your taste, or as near the color of the liquor you imitate as you can. Tincture kino is a good color and one ounce gum to one pint alcohol makes the tincture.

Blackberry Brandy.—Take ten gallons of brandy, and use five quarts nice rich blackberries mashed; macerate the berries in the liquor for ten days; then strain off, and add one ounce sugar to each gallon. If strawberries are used, work the same proportions with only half the quantity of sugar.

Jamaica Rum.—Pure spirits one gallon; one quart of the kind of rum you wish to imitate; one-eighth ounce oil of caraway—is enough for six gallons. Color to suit.

Holland Gin.—To one hundred gallons of rectified spirits add (after you have cut the oils well) one and one-half ounce of the oil of English juniper, one-half ounce of angelica essence, one-half ounce of the oil of coriander, and one-half ounce oil caraway; put this into the rectified spirit and rummage well. This is strong gin. To make this up, as it is called by the trade, add forty-five pounds of loaf sugar dissolved; then rummage the whole well together with four ounces roche alum. For finings, add four ounces salts of tartar.

Holland Gin No. 2.—To forty gallons proof or neutral spirits add spirits of nitre three ounces, loaf sugar four pounds, oil of juniper one ounce, oil caraway one-eighth ounce. The last two to be cut in one quart alcohol. Stand twenty-four hours.

Cognac Brandy.—To every ten gallons of pure spirits add two quarts New England rum, or one quart Jamaica rum, and from thirty to forty drops of oil cognac, cut in one-half pint alcohol, and color with burnt sugar to suit.

Cherry Brandy.—To every ten gallons of brandy made by the recipe for French brandy add three quarts of wild black cherries, stones and all bruised, crushed sugar two pounds. Let it stand for one week, then draw or rack it off as it is wanted for use. Do not use the bitter almond oil in any case, as it is the rankest poison.

Cherry Brandy.—Good whiskey ten gallons, wild black cherries five quarts, well bruised with stones broken; common almonds, shelled, one pound; white sugar, cinnamon, cloves and nutmeg, well bruised, of each one-half ounce. Mix and let stand twelve days, and draw off. This, with the addition of two gallons brandy, makes the most superior cherry brandy.

Milk Punch.—Yellow rinds of two dozen lemons, steep two days in two quarts brandy, add spirit three quarts, hot water two quarts, lemon juice one quart, loaf sugar four pounds, boiling milk two quarts, two nutmegs grated; mix, and in two hours strain through wool.

Rum Shrub.—Tartaric acid five pounds, pale sugar one hundred pounds, oil lemon four drachms, oil orange five drachms; put them into a large cask (eighty gallons) and add water ten gallons. Rummage till the acid and sugar are dissolved, then add rum (proof) twenty gallons, water to make up fifty-five gallons in all, coloring one quart or more. Fine with twelve eggs. The addition of twelve sliced oranges will improve the flavor.

Punch.—Water three gallons, tartaric acid four ounces, or to taste, lump sugar to sweeten, brandy three pints, rum three pints. The peels of three lemons grated, essence of lemon to flavor, rub the essence with a little lump sugar in a mortar, adding a little of the spirit.

Rum Shrub No. 2.—Lemon juice one pint, white sugar two pounds, rum three pints, water four quarts, mix and color. Ready for use.

Ginger Wine for Bar Purposes.—Put one ounce good ginger root bruised in one quart 95 per cent. alcohol; let it stand nine days and strain; add four quarts water and one pound white sugar dissolved in hot water; color with tincture of sanders to suit.

Ginger Wine for Family Use.—Water ten gallons, lump sugar twenty pounds, bruised ginger eight ounces, three or four eggs. Boil well and skim, then pour hot on six or seven lemons cut in slices, macerate for two hours, then rack and ferment; next add spirit two quarts, and afterward finings one pint; rummage well

Stomach Bitters.—Gentian root six ounces, orange peel ten ounces, cinnamon one ounce, anise seed two ounces, coriander seed two ounces, cardamom seed one-half ounce, Peruvian bark unground two ounces; bruise all the articles and add one ounce gum kino, put in two quarts alcohol and two quarts pure spirit, or good whiskey may be used instead of pure spirit; shake occasionally for ten days, and filter through three thicknesses of woolen; then one-half pint of this may be added to a gallon of whiskey, more or less as desired.

Peppermint Cordial.—Good whiskey ten gallons, water ten gallons, white sugar ten pounds, oil peppermint one ounce, in one pint alcohol, one pound flour well worked in with the fluid, one-half pound burnt sugar to color. Mix and let it stand one week before using. Other oil in place of peppermint, and you have any flavor desired.

Sangaree.—Wine, ale or porter, one-third to two-thirds water, hot or cold according to the season of the year, loaf sugar to the taste, with nutmeg.

Currant and Other Fruit Wine.—To every gallon of expressed juice add two gallons soft water, six pounds brown sugar, one and one-half ounce cream tartar and one quart brandy to every six gallons. Some prefer it without brandy. After fermentation, take four ounces isinglass dissolved in one pint of the wine, and put to each barrel, which will fine and clear it, when it must be drawn into clean casks or bottled, which is preferable.

Blackberry and Strawberry Wine are made by taking the above wine when made with port wine, and for every ten gallons from four to six quarts of the fresh fruit bruised and strained are added, and let stand four days, till the flavor is extracted. When bottling, add three or four broken raisins to each bottle.

Pale Brandy is made the same as by the above recipe, using pale instead of the French. and using only one ounce tincture of kino for every five gallons.

Morella Wine.—To each quart of the expressed juice of the Morella, or tame cherries, add three quarts of water and four pounds of coarse brown sugar; let them ferment and skim till worked clear, then draw off, avoiding the sediment at the bottom. Bung up or bottle, which is best for all wines, letting the bottles lie always on the side, either for wines or beers.

London Sherry.—Chopped raisins four hundred pounds; soft water, one hundred gallons; sugar, forty-five pounds; white tartar, one pound; cider, sixteen gallons. Let them stand together in a close vessel one month—stir frequently. Then add of spirit eight gallons; wild cherries, bruised, eight pounds. Let them stand one month longer, and fine with isinglass.

Port Wine.—Worked cider, forty-two gallons; good port wine, twelve gallons; good brandy, three gallons; pure spirits, six gallons; mix. Elderberries and aloes, and the fruit of the black haw make a fine purple color for wines, or use burnt sugar.

Scotch and Irish Whiskey.—To forty gallons of pure spirit add five gallons Scotch or Irish whiskey; creosote, one-quarter ounce, dissolved in one quart of alcohol; loaf sugar, one pound; stand ten days.

NOTE.—The peculiar flavor of Scotch whiskey may be nicely imitated by adding a few drops of pure creosote dissolved in a little acetic acid, to two or three gallons of good London gin; and the imitation will be still more perfect if the liquor is kept some months before drinking it.

Various Wines.—To twenty-eight gallons clarified cider add one gallon good brandy; crude tartar (this is what is deposited by grape wines); one pound of any kind of wine you wish to imitate; sweet milk to settle it, one pint; draw off thirty-six hours after thoroughly mixing.

Common Brandy.—To forty gallons pure or neutral spirits add one pound crude tartar, dissolved in one gallon hot water; acetic ether, one-quarter pint; bruised raisins, six pounds; tincture kino, two ounces; sugar, three pounds; color with sugar coloring; stand fourteen days and draw off.

French Brandy.—Pure spirit, one gallon; best French brandy, or any you wish to imitate, one quart; loaf sugar, two ounces; sweet spirits of nitre, one-half ounce; a few drops of tincture catechu or oak bark to roughen the taste if desired, and color to suit.

Monongahela Whiskey.—Common whiskey, thirty-six gallons; dried peaches, two quarts; rye, burnt and ground as coffee, one quart; cinnamon, cloves, allspice, bruised, one ounce each; loaf sugar, five pounds; sweet spirits of nitre, two ounces; put these in four gallons pure spirits; shake every day for a week, then draw off, and add the whole to thirty-six gallons of whiskey.

Drogheda Usquebaugh.—To one gallon brandy add stoned raisins one pound; cinnamon, cloves, nutmegs, and cardamoms, each one ounce, crushed in a mortar; saffron, one-half ounce; rind of one orange and sugar candy. Shake these well; in fourteen days afterward fine for use.

Champagne Cider.—Good pale cider, one hog-head; spirit, three gallons; sugar, twenty pounds; mix and let it stand two weeks; then fine with skimmed milk, one-half gallon; this will be very pale, and a similar article, when properly bottled and labeled, opens so brisk that even good judges have mistaken it for genuine champagne.

Superior Raisin Wine.—Take thirty pounds of chopped raisins, free from stems and dust, put them in a large keg, and add ten gallons soft water; let them stand two weeks unbunged, shaking occasionally (warm place in winter) then strain through woolen or filter; color with burnt sugar, bottle and cork well for use. For bar use, add a pint of good brandy to each gallon. The more raisins the better the wine—not exceeding five pounds to each gallon.

Old Bourbon Whiskey.—To forty gallons spirits add five gallons good Bourbon whiskey; spirits of nitre, two ounces; fusil oil from corn, two ounces; put in one quart alcohol; stand four days.

Peppermint Cordial.—One gallon essence of peppermint, twenty gallons spirits, twenty-five gallons water, five gallons gomme syrup. The cost can be regulated by adding water. Sells well.

Old Rye.—Take dried peaches one-half peck; bake, scorch and roast them in a stove, but don't burn; bruise and put them in a woolen pointed bag, and leach good common whiskey over them twice slowly—this for one barrel—add afterward twelve drops aqua ammonia to each barrel. With age you will have whiskey equal to "Old Rye."

Table Manna; or, Prize Honey Without Bees' Honey.—White sugar, five pounds; water, one and one-half pounds; simmer gradually over the fire and add one-half ounce alum in powder; skim off the scum, if any; set off to cool, adding a small quantity of the following extracts to flavor to suit the taste: **EXTRACT FOR FLAVORING HONEY**—Alcohol, one part; good Jamaica ginger, two ounces; macerate for ten days, adding two or three drops of otto of roses to scent. **FRANGIPANNI**—Spirit, one gallon; oil of bergamot, one ounce; oil of lemon one ounce; macerate four days, frequently shaking, then add water, one gallon; orange-flower water, one pint; essence vanilla, two ounces. **Mix. JOCKEY CLUB.**—Spirits of wine, five gallons; orange-flower water, one gallon; balsam Peru, four ounces; essence of bergamot, eight ounces; essence of musk, eight ounces; essence of cloves, four ounces; essence of neroli, two ounces. **Mix. LADIES' OWN.**—Spirits of wine

one gallon; ottar of roses, twenty drops; essence thyme, one-half ounce; essence neroli, one-quarter ounce; essence vanilla, one-half ounce; essence bergamot, one-quarter ounce; orange-flower water, six ounces. **KISS-ME-QUICK.**—Spirits, one gallon; essence thyme, one-quarter ounce; essence orange-flowers, two ounces; essence neroli, one-half ounce; ottar roses, thirty drops; essence jasmine, one ounce; essence balm mint, one-half ounce; petals of roses, four ounces; oil lemon, twenty drops; calorus aromaticus, one-half ounce; essence neroli, one-half ounce. Mix and strain. **UPPER TEN.**—Spirits of wine, four quarts; essence cedrat, two drachms; essence violets, one-quarter ounce; essence neroli, one-half ounce; ottar roses, twenty drops; orange-flower essence, one ounce; oil rosemary, thirty drops; oils bergamot and neroli, each one-half ounce.

Freezing Preparation.—Common sal-ammoniack, well pulverized, one part; saltpetre, two parts; mix well together. Then take common soda, well pulverized. To use, take equal quantities of these preparations (which must be kept separate and well covered previous to using), and put them in the freezing-pot; add of water a proper quantity, and put in the article to be frozen in a proper vessel, cover up, and your wants will soon be supplied. For freezing creams or wines this can not be beat.

Non-Explosive Burning Fluid.—Take five quarts alcohol, one quart camphene, and two ounces pulverized alum; mix, and let it stand twenty-four hours. If transparent, it is fit for use; if not, add sufficient alcohol to bring it to the natural color of the alcohol. The cover of the lamp must fit close, and a tin stopper be kept over the tube when not in use, to prevent evaporation.

Stimulators for Bald Heads and Bare Faces.—Tincture hartshorn, one ounce; borax, one-half ounce; alcohol, one pint; water, one pint; tincture cantharides, two drachms. **GRAHAM'S.**—Cologne, two ounces; liquid hartshorn, one drachm; tincture cantharides, two drachms; oil rosemary, twelve drops; oil nutmeg, twelve drops, oil lavender, twelve drops.

Tinctures are made with one ounce of gum, root, or bark, etc., dried, to each pint of proof spirits, and let it stand one week and filter.

Essences are made with one ounce of any given oil added to one pint alcohol. Peppermint is colored with tincture turmeric; cinnamon with tincture red sanders; wintergreen with tincture kino.

Furniture Polish.—Equal quantities of common wax, white wax, white soap, in the proportion of one ounce of each to pint water. Cut the above ingredients fine, and dissolve over a fire until well mingled. Bottle and label.

Liquid Glue.—The following recipe for "Prepared Glue," the discovery of a French chemist, is selling about the country as a secret, for various prices, from one to five dollars. It is a handy and valuable composition, as it does not gelatinize, putrefy, ferment or become offensive, and can be used cold for all the ordinary purposes of glue in making or mending furniture, or broken vessels that are not exposed to water, etc.: In a wide-mouthed bottle dissolve eight ounces of best glue in a half-pint of water, by setting it in a vessel of water and heating till dissolved. Then add slowly, constantly stirring, half ounce of strong aquafortis (nitric acid). Keep well corked, and it will be ready for use.

Zigura Oil.—One-half ounce pulverized saltpetre put in half-pint sweet oil. Cures inflammatory rheumatism. Bottle and label. Pays well.

Cresigas Lotion for the skin and complexion, a great secret. Distill two handfuls jessamine flowers in a quart of rose water and quart orange water. Strain through porous paper and add a scruple of musk and a scruple of ambergris. Bottle and label. Splendid wash for the skin.

Premium Tooth Powder.—Six ounces prepared chalk, one-half ounce cassia powder, one ounce orris. Mix well. Put in small pots and label.

Hair Restorative.—Four drachms oxide bismuth, four drachms spermaceti, four ounces pure hog's lard. The lard and spermaceti should be melted together. When nearly cool, stir in the bismuth and perfume. Put in pots and label. Prevents the hair from turning gray, restores gray hair.

Toilet Powder.—One pound white starch, four ounces oxide bismuth. Mix, box and label.

Pimpernel Kalydor for the skin and complexion.—Steep pimperl in pure rain water for three days. Bottle and label. Renders the skin clear and white.

Hair Invigorator.—Quart bay rum, pint alcohol, one ounce castor oil, one ounce tincture cantharides, pint sweet oil. Bottle and label.

Bandoline for adjusting the hair.—Boil a tablespoonful of liuseed oil in half-pint water for five minutes. Perfume, put in pots and label.

Balm of Gilead.—Opodeldoc, spirits of wine, saunders ammoniac, equal parts of each. Shake. Bottle and label. Cures neuralgia, pains, aches, etc. Apply as a lotion.

To Write Secret Letters.—Put five cents' worth citrate of potassa in an ounce vial of clear cold water. This forms an invisible fluid. Let it dissolve, and you can use on paper of any color. Use a goose-quill in writing. When you wish the writing to become visible, hold it to a red-hot stove.

Friction Soap.—One pound brown soap, two pounds fine white sand. Put in a vessel and heat all together. Mould in small cakes. Pays well.

Waterproof Composition for Boots and Shoes.—Beeswax, two ounces; beef suet, four ounces; resin, one ounce; neatsfoot oil, two ounces; lampblack, one ounce. Melt together. Sells well.

A Certain Cure for Drunkenness.—Sulphate of iron five grains; magnesia, ten grains; peppermint water, eleven drachms; spirits of nutmeg, one drachm; twice a day. This preparation acts as a tonic and stimulant, and so partially supplies the place of the accustomed liquor, and prevents that absolute physical and moral prostration that follows a sudden breaking off from the use of stimulating drinks.

Egyptian Cement for mending China, Glass, or Wooden Ware.—Take one pound of the best white glue, one-half pound dry white lead, one quart soft water, one-half pint alcohol; put the three first articles in a dish, and that dish in a pot of boiling water; let it boil until dissolved, then add the alcohol and boil again until mixed. A little camphor should also be added to preserve it and disguise its composition. Put in small bottles: 25 cents each.

JOCKEY TRICKS.

How to Make a Foundered and Spavined Horse Go Off Limber.—Take tincture cayenne, one ounce; laudanum, two ounces; alcohol, one pint; rub the shoulders well with warm water, then rub the above on his shoulders and back-bone; give him one ounce of laudanum and one pint of gin; put it down his throat with a pint bottle; put his feet in warm water as hot as he can bear it; take a little spirits of turpentine, rub it on the bottom part of his feet with a sponge after taking them out of the water; drive him about half a mile or a mile, until he comes out as limber as a rag. If he does not surrender to his pain, tie a thin cord around the end of his tongue.

How to Make Old Horses Appear Young.—Take tincture of assafoetida, one ounce; tincture cantharides, one ounce; oil cloves, one ounce; oil cinnamon, one ounce; antimony, two ounces; fenugreek, one ounce; fourth proof brandy, one-half gallon. Let it stand ten days, then give ten drops in one gallon of water.

How to Make a True-Pulling Horse Baulk.—Take tincture of cantharides, one ounce, and corrosive sublimate, one drachm. Mix and bathe the shoulders at night.

How to Distinguish Between Distemper and Glanders.—The discharge from the nose, if glanders, will sink in water; if distemper, it will not.

To Make a Horse Fleshy in a Short Time.—Feed with buckwheat bran, to which add a little of the shorts; keep in a dark stable. Half a day's drive will make a horse fatted in this way poor.

How to Make a Horse Stand by His Feed and Not Eat It.—Grease the front teeth and roof of the mouth with common tallow, and he will not eat until you wash it out.

How to Make a Horse Appear as if He Had the Glanders.—Melt fresh butter and pour in his ears.

How to Make a Horse Appear as if Foundered.—Take a fine wire or any substitute, and fasten it around the postern joint at night, smooth the hair down over it nicely, and by morning he will walk as stiff as if foundered.

Gilding Without a Battery.—Clean the silver or other article to be gilded with a brush and a little ammonia water, until it is evenly bright and shows no tarnish. Take a small piece of gold and dissolve it in about four times its volume of metallic mercury, which will be accomplished in a few minutes, forming an amalgam. Put a little of the amalgam on a piece of dry cloth, rub it on the article to be gilded. Then place on a stone in a furnace, and heat to the beginning of redness. After cooling, it must be cleaned with a brush and a little cream of tartar; and a beautiful and permanent gilding will be found.

To Renew Old Letters or Papers.—Boil galls in wine and sponge over the surface. The letters or writings will be as fresh as ever.

Increase of Milk and Butter.—If cows are given four ounces of French boiled hemp seed, it will greatly increase the quantity of milk. If pans are turned over this milk for fifteen minutes when first milked, or till cold, the same milk will give double the quantity of butter.

To Prevent Cattle, Fowls, etc., from Getting Old.—If cattle are occasionally fed a little of the extract of the June berry, it will renew or extend the period of their lives. Use in connection with the vanilla bean, and the two will produce the most wonderful results. It will act on people the same as on the animal kingdom. New flax seed frequently given to cattle in small quantities will make them, whether young or old, or if at poor and thin as skeletons, soon to appear fat and healthy.

To Make Brown Teeth White.—Apply carefully over the teeth a stick dipped in strong acetic or nitric acid, and immediately wash out the mouth with cold water. To make the teeth even, if irregular, draw a piece of fine cord betwixt them.

Paste Resembling the Diamond.—Take white sand, nine hundred parts; red lead, six hundred parts; pearl ash, four hundred and fifty parts; nitre, three hundred parts; arsenic, fifty parts; manganese, half a part. To make it harder use less lead, and if it should have a yellow tint, add a little more manganese.

Imitation Topaz.—Strass, five hundred parts; glass of antimony, twenty-one parts; purple of cassia, half a part. Fuse for twenty-four hours, and cool slowly.

Imitation of the Ruby.—Strass, eighty parts; oxide of manganese, two parts. Mix and fuse same as topaz.

Imitation Emerald.—Strass, five hundred parts; glass of antimony, twenty parts; oxide of cobalt, three parts. Fuse with care for twenty-four hours, then cool slowly.

Imitation Sapphire.—Oxide of cobalt, one part; strass, eighty parts. Fuse carefully for thirty-six hours. Silver and Gold Solutions are merely these metals dissolved in acids, then diluted. The article to be plated is suspended in the solution, and a common galvanic battery brought into play—the negative wire in the solution, and the positive attached to the article.

A Valuable Secret.—Put eight silver shillings into two ounces of nitric acid. When the silver disappears, throw into it a pint of water and four ounces of common salt. The salt will throw down a powder, which is pure silver. Now decant off the water and repeat the same washings till all the effects of the salt shall have disappeared. Now add to this white powder two ounces of cyanide of potassium, and three ounces of hyposulphate of soda. Now add to all this two quarts of pure rain water, and your silver mixture is complete.

Now you may do, by the aid of this mixture, all sorts of plating—watch-chains, rings, medals, watches, ornaments, steel, iron and German silver goods of every description, as spoons, spectacles, etc.

Hang any of these articles in the solution, suspended at the end of a strip of lead, or you can immerse the article and boil it ten or twenty minutes, according to the thickness of the silvering that you desire. If the articles to be plated are clean, a pure and durable silver surface will be the result.

A New Alloy of Copper Resembling Gold, which is known as “oreide” of gold, is composed of one hundred parts (by weight) of pure copper, seventeen of zinc, six of common magnesia, 3-60 sal ammoniac, 1-80 quick lime and tartar.

Fumes.—The fumes of lead will make all metals malleable, while the fumes of mercury and arsenic will make all metals brittle.

To Make Gold Solution for Electro-Plating.—Dissolve two and one-half pennyweights of gold in one-quarter ounce nitric acid and one and one-half ounces of muriatic acid; then evaporate to dryness, and add one ounce cyanide of potassium and one quart of hot rain-water. The operator must avoid breathing the fumes that ascend from the solution; they are dangerous.

German Silver.—German silver is an alloy of nickel with copper or zinc, containing in one hundred parts fifty of copper, thirty of zinc, and twenty of nickel. This makes the most valuable composition known as German silver.

Common Pewter.—Melt in a crucible seven pounds of tin, and when fused throw in one pound of lead, six ounces of copper and two ounces of zinc.

To Make Silver Solution.—Dissolve one ounce of silver in two ounces of nitric acid and two ounces of hot rain-water. When dissolved, add about two ounces of common table salt and one quart hot water; stir the mixture and allow it to settle; pour off the liquor and wash the precipitate at least four times in hot water; then add one ounce cyanide of potassium, two ounces of hyposulphate of soda and one quart of rain-water.

How to Get Sleep.—How to get sleep is to many persons a matter of high importance. Nervous persons who are troubled with wakefulness and excitability, usually have a strong tendency of blood on the brain, with cold extremities. The pressure of the blood on the brain keeps it in a stimulated or wakeful state, and the pulsations in the head are often painful. Let such rise and chafe the body and extremities with a brush or towel, or rub smartly with the hands, to promote circulation, and withdraw the excessive amount of blood from the brain, and they will fall asleep in a few moments. A cold bath, or a sponge bath and rubbing, or a good run, or a rapid walk in the open air, or going up and down stairs a few times just before retiring, will aid in equalizing circulation and promoting sleep. These rules are simple, and easy of application in castle or cabin, and may minister to the comfort of thousands who would freely expend money for an anodyne to promote "Nature's sweet restorer, balmy sleep."

To Destroy Insects.—When bugs have obtained a lodgment in walls or timber, the surest mode of overcoming the nuisance is to putty up every hole that is moderately large, and oil-paint the whole wall or timber. In bed-furniture, a mixture of soft soap with snuff or arsenic, is useful to fill up the holes where the bolts or fastenings are fixed, etc. French polish may be applied to the smoother parts of the wood.

Love's Telegraph.—If a gentleman wants a wife, he wears a ring on the first finger of the left hand; if he be engaged, he wears it on the second finger; if married, on the third; and on the fourth if he never intends to be married. When a lady is not engaged, she wears a hoop or diamond on her first finger; if engaged, on the second; if married, on the third; and on the fourth if she intends to die unmarried. When a gentleman presents a fan, flower, or trinket to a lady with the left hand, this, on his part, is an overture of regard. Should she receive it with the left hand, it is considered as an acceptance of his esteem; but if with the right hand, it is a refusal of the offer. Thus, by a few simple tokens explained by rule the passion of love is expressed; and through the medium of the telegraph, the most timid and diffident man may, without difficulty, communicate his sentiments of regard to a lady, and, in case his offer should be refused, avoid experiencing the mortification of an explicit refusal.

To Fatten Fowls in a Short Time.—Mix together ground rice well scalded with milk, and add some coarse sugar. Feed them with this in the daytime, but not too much at once. Let it be rather thick.

When Velvet Gets Plushed from pressure hold the parts over a basin of hot water, with the lining of the article next the water. The pile will soon rise, and assume its original beauty.

How Summer Suits should be Washed.—Summer suits are nearly all made of white or buff linen, pique, cambric, or muslin, and the art of preserving the new appearance after washing is a matter of the greatest importance. Common washerwomen spoil everything with soda, and nothing is more common than to see the delicate tints of lawns and percales turned into dark blotches and muddy streaks by the ignorance and vandalism of a laundress. It is worth while for ladies to pay attention to this, and insist upon having their summer dresses washed according to the directions which they should be prepared to give their laundresses themselves. In the first place, the water should be tepid, the soap should not be allowed to touch the fabric; it should be washed and rinsed quick, turned upon the wrong side and hung in the shade to dry, and when starched (in thin boiled but not boiling starch) should be folded in sheets or towels and ironed upon the wrong side as soon as possible. But linen should be washed in water in which hay or a quart bag of bran has been boiled. This last will be found to answer for starch as well, and is excellent for print dresses of all kinds, but a handful of salt is very useful also to set the colors of light cambrics and dotted lawns; and a little ox gall will not only set but brighten yellow and purple tints, and has a good effect upon green.

How to Fasten Rubber to Wood and Metal.—As rubber plates and rings are now-a-days used almost exclusively for making connections between steam and other pipes and apparatus, much annoyance is often experienced by the impossibility or imperfection of an air-tight connection. This is obviated entirely by employing a cement which fastens alike well to the rubber and to the metal or wood. Such cement is prepared by a solution of shellac in ammonia. This is best made by soaking pulverized gum shellac in ten times its weight of strong ammonia, when a slimy mass is obtained, which in three to four weeks will become liquid without the use of hot water. This softens the rubber, and becomes, after volatilization of the ammonia, hard and impermeable to gases and fluids.

Everlasting Fence Posts.—I discovered many years ago that wood could be made to last longer than iron in the ground, but thought the process so simple and inexpensive that it was not worth while to make any stir about it. I would as soon have poplar, basswood, or quaking ash as any other kind of timber for fence posts. I have taken out basswood posts after having been set seven years, which were as sound when taken out as when they were first put in the ground. Time and weather seemed to have no effect on them. The posts can be prepared for less than two cents a-piece. This is the recipe: Take boiled linseed oil and stir it in pulverized charcoal to the consistency of paint. Put a coat of this over the timber, and there is not a man that will live to see it rotten.

How to Test the Richness of Milk.—Procure any long glass vessel—a cologne bottle or long phial. Take a narrow strip of paper, just the length from the neck to the bottom of the phial, and mark it off with one hundred lines at equal distances; or into fifty lines, and count each as two, and paste it upon the phial, so as to divide its length into a hundred equal parts. Fill it to the highest mark with milk fresh from the cow, and allow it to stand in a perpendicular position twenty-four hours. The number of spaces occupied by the cream will give you its exact percentage in the milk without any guess work.

To Mend Tinware by the Heat of a Candle.—Take a vial about two-thirds full of muriatic acid and put into it little bits of sheet zinc as long as it dissolves them; then put in a crumb of sal ammoniac, and fill up with water, and it is ready to use. Then, with the cork of the vial, wet the place to be mended with the preparation; then put a piece of sheet zinc over the hole, and hold a lighted candle or spirit lamp under the place, which melts the solder on the tin, and causes the zinc to adhere without further trouble. Wet the zinc also with the solution; or a little solder may be put on instead of the zinc, or with the zinc.

To Take Iron-moulds out of Linen.—

Hold the iron-mould on the cover of a tankard of boiling water, and rub on the spot a little juice of sorrel and a little salt; and when the cloth has thoroughly imbibed the juice wash it in lye.

To Take Wax out of Velvet of all Colors except Crimson.—Take a crumby wheat-en loaf, cut it in two, toast it before the fire, and, while very hot, apply it to the part spotted with wax. Then apply another piece of toasted bread hot as before, and continue this application until the wax is entirely taken out.

Godfrey's Cordial.—Sassafras, six ounces; seeds of coriander, caraway, and anise, of each one ounce; infuse in six pints of water; simmer the mixture till reduced to four pints; then add six pounds of molasses; boil a few minutes; when cold add three fluid ounces of tincture of opium. For children teething.

Poultice for Burns or Frozen Flesh.

—Indian-meal poultices, covered with young hyson tea, moistened with hot water, and laid over burns or frozen parts, as hot as can be borne, will relieve the pain in five minutes; and blisters, if they have not, will not arise. One poultice is generally sufficient.

Tree of Lead.—Dissolve an ounce of sugar of lead in a quart of clean water, and put it into a glass decanter or globe. Then suspend in the solution, near the top, a small, piece of zinc of an irregular shape. Let it stand undisturbed for a day, and it will begin to shoot out into leaves and apparently to vegetate. If left undisturbed for a few days, it will become extremely beautiful; but it must be moved with great caution. It may appear to those unacquainted with chemistry that the piece of zinc actually puts out leaves; but this is a mistake, for, if the zinc be examined, it will be found nearly unaltered. This phenomenon is owing to the zinc having a greater attraction for oxygen than the lead has; consequently, it takes it from the oxyde of lead, which re-appears in its metallic state.

To Preserve Grapes.—Take a cask or barrel which will hold water, and put into it, first a layer of bran, dried in an oven, or of ashes, well dried and sifted; upon this place a layer of grapes well cleaned, and gathered in the afternoon of a dry day, before they are perfectly ripe; proceed thus with alternate layers of bran or ashes and grapes, till the barrel is full, taking care that the grapes do not touch each other, and let the last layer be of bran or ashes; then close the barrel, so that the air may not penetrate, which is an essential point. Grapes thus packed will keep for nine or even twelve months. To restore them to freshness, cut the end of the stalk of each bunch of grapes, and put it into red wine, as you would flowers into water. White grapes should be put into white wine.

To Prevent Snow-water from Penetrating Shoes.—This simple and effectual remedy is nothing more than a little beeswax and mutton suet, warmed in a pipkin until in a liquid state. Then rub some of it lightly over the edges of the sole where the stitches are, which will repel the wet, and not in the least prevent the blacking from having the usual effect.

To Make Sea-water fit for Washing Linen.—Soda put into sea-water makes it turbid; the lime and magnesia fall to the bottom. To make sea-water fit for washing linen at sea, as much soda must be put in it as not only to effect a complete precipitation of these earths, but to render the sea-water sufficiently laxivial or alkaline. Soda should always be taken to sea for this purpose.

Cracked Nipples.—Glycerine and tannin, equal weights, rubbed together into an ointment, is very highly recommended, as is also mutton tallow and glycerine.

To Take the Impression of any Butterfly in all its Colors.—Having taken a butterfly, kill it without spoiling its wings, which contrive to spread out as regularly as possible in a flying position. Then, with a small brush or pencil, take a piece of white paper; wash a part of it with gum-water a little thicker than ordinary, so that it may easily dry. Afterward, laying your butterfly on the paper, cut off the body close to the wings, and, throwing it away, lay the paper on a smooth board, with the fly upward; and, laying another paper over that, put the whole preparation into a screw press, and screw down very hard, letting it remain under that pressure for half an hour. Afterward take off the wings of the butterfly, and you will find a perfect impression of them, with all their various colors, marked distinctly, remaining on the paper. When this is done, draw between the wings of your impression the body of the butterfly, and color it after the insect itself.

Easy and Safe Method of Discharging Grease from Woolen Cloths.—Fuller's earth or tobacco-pipe clay, being put wet on an oil spot, absorbs the oil as the water evaporates, and leaves the vegetable or animal fibres of the cloth clean on being beaten or brushed out. When the spot is occasioned by tallow or wax, it is necessary to heat the part cautiously by an iron, or the fire, while the cloth is drying. In some kinds of goods, blotting-paper, bran, or raw starch may be used with advantage.

Candied Lemon or Peppermint, for Colds.—Boil one and one-half pounds of sugar in $\frac{3}{4}$ half-pint of water, till it begins to candy round the sides; put in eight drops of essence; pour it upon buttered paper, and cut it with a knife.

Chlorine Pastiles for Disinfecting the Breath.—Dry chloride of lime, two drachms; sugar eight ounces; starch, one ounce; gum tragacanth, one drachm; carmine, two grains. Form into small lozenges.

2. Sugar flavored with vanilla one ounce; powdered tragacanth, 20 grains; liquid chloride of soda sufficient to mix; add two drops of any essential oil. Form a paste and divide into lozenges of fifteen grains each.

Cholera Remedy.—Spirits of wine, one ounce; spirits of lavender, quarter ounce; spirits of camphor, quarter ounce; compound tincture of benzoin, half an ounce; oil of origanum, quarter ounce; twenty drops on moist sugar. To be rubbed outwardly also.

2. Twenty-five *minims* of diluted sulphuric acid in an ounce of water.

Corn Remedy.—Soak a piece of copper in strong vinegar for twelve or twenty-four hours. Pour the liquid off, and bottle. Apply frequently, till the corn is removed.

2. Supercarbonate of soda, one ounce, finely pulverized, and mixed with half an ounce of lard. Apply on a linen rag every night.

Infant's Syrup.—The syrup is made thus: one pound best box raisins, half an ounce of anise-seed, two sticks licorice; split the raisins, pound the anise-seed, and cut the licorice fine; add to it three quarts of rain water, and boil down to two quarts. Feed three or four times a day, as much as the child will willingly drink. The raisins are to strengthen, the anise is to expel the wind, and the licorice as a physic.

Cough Syrup.—Put one quart hoarhound to one quart water, and boil it down to a pint; add two or three sticks of licorice and a tablespoonful of essence of lemon. Take a tablespoonful of the syrup three times a day, or as often as the cough may be troublesome. The above recipe has been sold for \$100. Several firms are making much money by its manufacture.

Tonic.—The following is the tonic used by reformed drunkards to restore the vigor of the stomach. Take of gentian root, half an ounce; valerian root one drachm; best rhubarb root, two drachms; bitter orange peel, three drachms; cardamon seeds, half an ounce, and cinamon bark, one drachm. Having bruised all the above together in a mortar (the druggist will do it if requested), pour upon it one and a half pints of boiling water and cover up close; let stand till cold; strain, bottle and cork securely; keep in a dark place. Two tablespoonfuls may be taken every hour before meals, and half that quantity whenever the patient feels that distressing sickness and prostration so generally present for some time after alcoholic stimulants have been abandoned.

To Increase the Laying of Eggs.—

The best method is to mix with their food, every other day, about a teaspoonful of ground cayenne pepper to each dozen fowls. While upon this subject, it would be well to say, that if your hens lay soft eggs, or eggs without shells, you should put plenty of old plaster, egg-shells, or even oyster-shells broken up, where they can get at it.

Arnica Liniment.—Add to one pint of sweet oil, two tablespoonfuls of tincture of arnica; or the leaves may be heated in the oil over a slow fire. Good for wounds, stiff-joints, rheumatic, and all injuries.

Camphorated Oil.—This is another camphor liniment. The proportions are the same as in the preceding formula, substituting olive oil for the alcohol, and exposing the materials to a moderate heat. As an external stimulant application it is even more powerful than the spirits; and to obtain its full influence the part treated should be also covered with flannel and oil silk. It forms a valuable liniment in chronic rheumatism and other painful affections, and is specially valuable as a counter-irritant in sore or inflamed throats and diseased bowels. Camphor constitutes the basis of a large number of valuable liniments. Thus, in cases of whooping-cough and some chronic bronchitic affections, the following liniment may be advantageously rubbed into the chest and along the spine. Spirits of camphor, two parts; laudanum, half a part; spirits of turpentine, one part; castile soap in powder, finely divided, half an ounce; alcohol, three parts. Digest the whole together for three days, and strain through linen. This liniment should be gently warmed before using. A powerful liniment for old rheumatic pains, especially when effecting the loins, is the following: camphorated oil and spirits of turpentine, of each two parts; water of hartshorn, one part; laudanum, one part; to be well shaken together. Another very efficient liniment or embrocation, serviceable in chronic painful affections, may be conveniently and easily made as follows: Take of camphor, one ounce; cayenne pepper, in powder, two teaspoonfuls; alcohol, one pint. The whole to be digested with moderate heat for ten days, and filtered. It is an active rubificant; and after a slight friction with it, it produces a grateful thrilling sensation of heat in the pained part, which is rapidly relieved.

Camphor Tablet for Chapped Hands, etc.—Melt tallow, and add a little powdered camphor and glycerine, with a few drops of oil of almonds to scent. Pour in molds and cool.

Great Pain Extractor.—Spirits of ammonia, one ounce; laudanum, one ounce; oil of organum, one ounce; nut-ton tallow, half pound; combine the articles with the tallow when it is nearly cool.

Certain Cure for Eruptions. Pimples, etc.—Having in numberless instances seen the good effects of the following prescription, I can certify to its perfect remedy: Dillute corrosive sublimate with the oil of almonds, apply it to the face occasionally, and in a few days a cure will be effected.

Swain's Vermifuge.—Wormseed, two ounces; valerian, rhubarb, pink-root, white agaric, of each, one and a half ounces; boil in sufficient water to yield three quarts of decoction, and add to it thirty drops of oil of tansy, and forty-five drops of oil of cloves, dissolved in a quart of rectified spirits. Dose, one teaspoonful at night.

Cough Compound.—For the cure of coughs, colds, asthma, whooping cough, and all diseases of the lungs: One spoonful of common tar, three spoonfuls of honey, the yolk of three hen's eggs, and half pint of wine; beat the tar, eggs and honey well together with a knife, and bottle for use. A teaspoonful every morning, noon, and night, before eating.

To Take out Spots of Ink.—As soon as the accident happens wet the place with juice of sorrel or lemon, or with vinegar, and the best hard white soap.

Lily White, is nothing but purified chalk, scented.

Indelible Ink for Marking Clothing.

—Nitrate of silver, five scruples; gum arabic, two drachms; sap green, one scruple; distilled water, one ounce; mix together. Before writing on the article to be marked, apply a little of the following: carbonate of soda, one-half ounce; distilled water, four ounces; let this last, which is the mordant, get dry; then, with a quill pen, write what you require.

Ink, Indelible.—To four drachms of lunar caustic, in four ounces of water, add sixty drops of nut-galls. made strong by being pulverized and steeped in soft water. The mordant, which is to be applied to the cloth before writing, is composed of one ounce of pearlash, dissolved in four ounces of water, with a little gum arabic dissolved in it. Wet the spot with this; dry and iron the cloth; then write.

2. Nitrate of silver, five scruples; gum arabic, two drachms; sap green, one scruple; distilled water one ounce. Mix together. Before writing on the article to be marked, apply a little of the following: carbonate of soda, half an ounce; distilled water, four ounces; let this last, which is the mordant, get dry; then with a quill, write what you require.

Ink Powder for Immediate Use.—Reduce to powder ten ounces of gall-nuts, three ounces of green copperas, two ounces each of powdered alum and gum arabic. Put a little of this mixture into white wine, and it will be fit for immediate use.

Ink, Indelible Marking.—One and a half drachms of nitrate of silver, one ounce of distilled water, half an ounce of strong mucilage of gum arabic, three-quarters of a drachm of liquid ammonia. Mix the above in a clean glass bottle, cork tightly, and keep in a dark place till dissolved, and ever afterward. Directions for use. Shake the bottle, then dip a clean quill pen in the ink, and write and draw what you require on the article; immediately hold it close to the fire (without scorching), or pass a hot iron over it, and it will become a deep and indelible black, indestructible by either time or acids of any description.

Japanese Cement.—Immediately mix the best powdered rice with a little cold water, then gradually add boiling water until a proper consistence is acquired, being particularly careful to keep it well stirred all the time; lastly, it must be boiled for a minute in a clean saucepan or earthen pipkin. This glue is beautifully white and almost transparent, for which reason it is well adapted for fancy paper work, which requires a strong and colorless cement.

Liquid Glue.—Dissolve one part of powdered alum, in a hundred and twenty parts of water; add one hundred and twenty parts of glue, ten of acetic acid, and forty of alcohol, and digest. Prepared glue is made by dissolving common glue in warm water, and then adding acetic acid (strong vinegar) to keep it. Dissolve one pound of best glue in one and a half pint of water, and add one pint of vinegar. It is then ready for use.

Magic Copying Paper.—To make black paper, lamp-black mixed with cold lard; red paper, Venetian red mixed with lard; blue paper, Prussian blue mixed with lard; green paper, Chrome green mixed with lard. The above ingredients to be mixed to the consistency of thick paste, and to be applied to the paper with a rag. Then take a flannel rag, and rub until all color ceases coming off. Cut your sheets four inches wide and six inches long; put four sheets together, one of each color, and sell for twenty-five cents per package. The first cost will not exceed three cents.

Directions for writing with this paper: Lay down your paper upon which you wish to write; then lay on the copying paper, and over this lay any scrap of paper you choose; then take any hard pointed substance and write as you would with a pen.

Liquid Rouge for the Complexion.—Four ounces of alcohol, two ounces of water, twenty grains of carmine; twenty grains of ammonia, six grains of oxalic acid; six grains of alum—mix.

Complexion Pomatum.—Mutton grease, one pound; oxid of bismuth, four ounces; powdered French chalk, two ounces. Mix.

To Prevent Gray Hair.—When the hair begins to change color, the use of the following pomade has a beneficial effect in preventing the disease extending, and has the character of even restoring the color of the hair in many instances: Lard, four ounces; spermaceti, four drachms; oxide of bismuth, four drachms. Melt the lard and spermaceti together, and when getting cold stir in the bismuth; to this can be added any kind of perfume, according to choice. It should be used whenever the hair requires dressing. It must not be imagined that any good effect speedily results; it is in general a long time taking place, the change being very gradual.

Vinegar Rouge.—Cochineal, three drachms; carmine lake, three drachms; alcohol, six drachms; mix, and then put into one pint of vinegar, perfumed with lavender; let it stand a fortnight, then strain for use.

Pearl Powder for Complexion.—Take white bismuth, one pound; starch powder, one ounce; orris powder, one ounce. Mix and sift through lawn. Add a drop of otter of roses or neroli.

Pearl Water for the Complexion.—Castile soap, one pound; water, one gallon. Dissolve, then add alcohol, one quart; oil of rosemary and oil of lavender, each two drachms. Mix well.

Spanish Vermilion for the Toilet.—Take an alkine solution of bastard saffron, and precipitate the color with lemon juice; mix the precipitate with a sufficient quantity of finely powdered french chalk and lemon juice, then add a little perfume.

To Remove Freckles and Tan.—Tincture of benzoin, one pint; tincture tolu, one-half pint; oil rosemary, one-half ounce. Put one teaspoonful of the above mixture in one-quarter pint of water, and with a towel wash the face night and morning.

Feuchtwanger's Tooth Paste.—Powdered myrrh, two ounces burned alum, one ounce; cream tartar, one ounce; cuttle fish bone, four ounces; drop lake, two ounces; honey, half a gallon. Mix.

Fine Tooth Powder.—Powdered orris root, one ounce; peruvian bark, one ounce; prepared chalk, one ounce; myrrh, one-half ounce.

Superior Cologne Water.—Alcohol, one gallon; add oil of cloves, lemon, nutmeg, and bergamot, each one drachm; oil neroli, three and a half drachms; seven drops of oils of rosemary, lavender and cassia; half a pint of spirits of nitre; half a pint of elder-flower water. Let it stand a day or two, then take a cullender and at the bottom lay a piece of white cloth, and fill it up, one-fourth of white sand, and filter through it.

Ammoniacal Pomatum for Promoting the Growth of Hair.—Take almond oil, quarter of a pound; white wax, half an ounce; clarified lard, three ounces; liquid ammonia, a quarter fluid ounce; otto of lavender, and cloves, of each one drachm. Place the oil, wax and lard in a jar, which set in boiling water; when the wax is melted, allow the grease to cool till nearly ready to set, then stir in the ammonia and the perfume, and put into small jars for use. Never use a hard brush, nor comb the hair too much. Apply the pomade at night only.

Alum in Starch.—For starching muslins, gingham and calicoes, dissolve a piece of alum the size of a shell-bark, for every pint of starch, and add to it. By so doing the colors will keep bright for a long time, which is very desirable when dresses must be often washed, and the cost is but a trifle.

Remedy against Moths.—An ounce of gum camphor and one of the powdered shell of red pepper are macerated in eight ounces of strong alcohol for several days, then strained. With this tincture the furs or cloths are sprinkled over, and rolled up in sheets. Instead of the pepper bitter apple may be used. This remedy is used in Russia under the name of the Chinese tincture for moths.

How to Cause Vegetables and Fruits to Grow to an Enormous Size, etc.—A curious discovery has recently been made public in France, in regard to the culture of vegetable and fruit trees. By watering with a solution of sulphate of iron, the most wonderful fecundity has been attained. Pear-trees and beans which have been submitted to this treatment have nearly doubled in the size of their productions, and a noticeable improvement has been remarked in their flavor. Dr. Becourt reports that while at the head of an establishment at Enghein, or the sulphurous springs, he had the gardens and plantations connected with it watered, during several weeks of the early spring, with sulphurous water, and that not only the plantation prospered to a remarkable extent, but flowers acquired a peculiar brilliancy of coloring and healthy aspect which attracted universal attention.

To Destroy Cockroaches.—The following is said to be effectual: These vermin are easily destroyed, simply by cutting up green cucumbers at night, and placing them about where roaches commit depredations. What is cut from the cucumbers in preparing them for the table answers the purpose as well, and three applications will destroy all the roaches in the house. Remove the peelings in the morning and renew them at night.

To Give a Stove a Fine Brilliant Appearance.—A teaspoonful of pulverized alum mixed with stove polish will give the stove a fine lustre, which will be quite permanent.

Turkish Rouge.—Take half pint of alcohol and one ounce of alkanet; macerate ten days and pour off the liquid, which should be bottle. This is the simplest and one of the best articles of the kind.

CAUTION.—White lead, and all cosmetic powders containing it should never be applied to the skin, as it is the most dangerous article that could be used.

Mouth Pastiles, for Perfuming the Breath.—Extract of licorice, three ounces; oil of cloves, one and a half drachms; oil of cinnamon, fifteen drops. Mix, and divide into one-grain pills, and silver them.

2. Catechu, seven drachms; orris powder, forty grains, sugar, three ounces; oil of rosemary, (or of clove, peppermint, or cinnamon), four drops. Mix, and roll flat on an oiled marble slab, and cut into very small lozenges.

To Clean Furniture.—An old cabinet maker says the best preparation for cleaning picture frames and restoring furniture, especially that somewhat marred or scratched, is a mixture of three parts linseed oil and one part spirits of turpentine. It not only covers the disfigured surface, but restores wood to its natural color, and leaves a lustre upon its surface. Put on with a woolen cloth, and when dry, rub with woolen.

Bruises on Furniture.—Wet the part in warm water; double a piece of brown paper five or six times, soak in the warm water, and lay it on the place; apply on that a warm, but not hot, flat-iron till the moisture is evaporated. If the bruise be not gone repeat the process. After two or three applications the dent will be raised to the surface. If the bruise be small, merely soak it with warm water, and hold a red-hot iron near the surface keeping the surface continually wet—the bruise will soon disappear.

Another Cure for Drunkenness.—The following appeared lately in a leading New York Daily. In times past you have published numerous articles on the cure of drunkenness; but none of them, so far as I have been able to discover, have resulted in relieving the victim they were intended to benefit. With your permission, I will now give to the world, a sure and speedy cure for intemperance—a cure that has been tried frequently, and always successfully.

Let the inebriate—it matters not whether he is just getting off, is beginning it, or on a “spree”—begin by taking every two hours one drachm (teaspoonful) of tincture of cinchona (Peruvian bark). This will make him feel good. He can increase the dose to six drachms (teaspoonfuls) without any danger, and take it in that proportion four to ten times a day. It will not destroy his appetite for food. In the course of a few days, the anti-periodic properties of the cinchona begin to tell, and he loses not only all taste for the tincture, but also for everything in the way of alcohol.

Recently in this city, a well-known gentleman—who has in times past been on his \$500. and \$1.000 sprees—tried this remedy, telling the various druggists where he drank it that he was fighting, and would conquer, the greatest demon on earth; but they could hardly believe him. Yet he conquered, and the appetite for drink vanished. He was never nervous, never lost his appetite or sleep during the siege, and came out of the ordeal in perfect health. During the time his fever lasted I gave him two or three doses of simple medicine for his general health, but the tincture of cinchona did the business. This case can be verified by the proprietors of seven of our drug stores. So well satisfied am I of the value of the treatment, that I will guarantee a cure in all cases, using this remedy alone.

MINNEAPOLIS, Minn., March 9.

R. D. UNGER, M. D.

To give Lustre to Silver.—Dissolve a quantity of alum in water so as to make a pretty strong brine, and skim it carefully; then add some soap to it, and dip a linen rag in it, and rub over the silver.

FARMERS' DEPARTMENT.

How to get New Varieties of Potatoes.—When the vines are done growing and are turned brown, the seed is ripe; then take the balls and string with a large needle and strong thread; hang them in a dry place, where they will gradually dry and mature, without danger or injury from frost. In the month of April, soak the ball for several hours from the pulp; when washed and dried, they are fit for sowing in rows, in a bed well prepared in the garden; they will sprout in a fortnight; they must be attended to like other vegetables. When about two inches high, they may be thinned and transplanted into rows. As they increase in size, they should be hilled. In the autumn many of them will be of the size of a walnut, and from that to a pea. In the following spring they should be planted in hills, placing the large ones together,—they will in the second season attain their full size, and will exhibit several varieties of form, and may then be selected to suit the judgment of the cultivator. I would prefer gathering the balls from potatoes of a good kind. The first crops from seeds thus obtained, will be productive, and will continue so for many years, gradually deteriorating, until they will need a renewal by the process.

TABLES.

We give in the following tables a great deal of condensed information, such as every seedman is asked for hundreds of times in a season. Carefully refer to them as well as to all other parts of our Book :

NUMBER OF PLANTS ON AN ACRE AT SPECIAL DISTANCES.

6 inches apart each way.....	174,240
1 foot " " ".....	42,560
18 inches " " ".....	19,360
2 feet by 1 foot.....	21,780
2 feet each way.....	10,890
3 feet by 2 feet.....	7,260
3 feet apart each way.....	4,840
4 feet " " ".....	2,725
5 feet " " ".....	1,745
6 feet " " ".....	1,210
7 feet " " ".....	887
8 feet " " ".....	680

QUANTITY OF SEEDS REQUIRED FOR A GIVEN NUMBER OF PLANTS, NUMBER OF HILLS, OR LENGTH OF DRILL.

Asparagus.....	1 oz. to	60 ft. drill.
Beet.....	1 oz. to	60 ft. "
Carrot.....	1 oz. to	150 ft. "
Endive.....	1 oz. to	150 ft. "
Okra.....	1 oz. to	40 ft. "
Onion.....	1 oz. to	100 ft. "
Onion sets, small.....	1 qt. to	20 ft. "
Parsley.....	1 oz. to	150 ft. "
Parsnips.....	1 oz. to	200 ft. "
Radish.....	1 oz. to	100 ft. "
Salsify.....	1 oz. to	70 ft. "
Spinach.....	1 oz. to	100 ft. "
Turnip.....	1 oz. to	150 ft. "
Peas.....	1 qt. to	100 ft. "
Dwarf Beans.....	1 qt. to	100 ft. "
Pole Beans.....	1 qt. to	150 hills,
Corn.....	1 qt. to	200 "
Cucumber.....	1 oz. to	50 "
Water Melon.....	1 oz. to	30 "
Musk Melon.....	1 oz. to	60 "
Pumpkin.....	1 oz. to	40 "
Early Squash.....	1 oz. to	50 "
Marrow Squash.....	1 oz. to	16 "
Cabbage.....	1 oz.	3,000 Plants
Cauliflower.....	1 oz.	3,000 "
Celery.....	1 oz.	4,000 "
Egg Plant.....	1 oz.	2,000 "
Lettuce.....	1 oz.	4,000 "
Pepper.....	1 oz.	2,000 "
Tomato.....	1 oz.	2,000 "

QUANTITY OF SEEDS USUALLY SOWN TO THE ACRE.

Barley, broadcast.....	2 to 3	bush.
Beans, dwarf, in drills.....	1½	bush.
Beans, pole, in hills.....	8 to 10	qts.
Beet, in drills.....	4 to 5	lbs.
Broom-Corn, in hills.....	4 to 6	qts.
Buckwheat, broadcast.....	¾ to 1	bush.
Carrot, in drills.....	2 to 3	lbs.
Corn, in hills.....	8	qts.
Corn, in soiling.....	3	bush.
Clover, Alsike.....	5	lbs.
Clover, Red, alone.....	10	lbs.
Clover, Red, with Timothy.....	10	lbs.
Clover, White.....	6 to 8	lbs.
Clover, Lucerne.....	15	lbs.
Cucumber, in hills.....	1 to 2	lbs.
Flax, broadcast.....	1 to 2	bush.
Grass, Blue, alone.....	3	bush.
“ Hungarian.....	½	bush.
“ Lawn.....	3	bush.
“ Orchard.....	2 to 3	bush.
“ Red Top.....	2	bush.
“ Rye.....	2	bush.
“ R. I. Bent.....	3	bush.
“ Timothy.....	¼	bush.
Millet.....	½	bush.
Mustard, broadcast.....	12 to 16	qts.
Oats, broadcast.....	2 to 3	bush.
Onions, in drills.....	4 to 6	lbs.
Parsnips, in drills.....	4 to 5	lbs.
Peas, Early, in drill.....	1½	bush.
Peas, Marrowfat, in drills.....	1½	bush.
Peas, broadcast.....	3	bush.
Potato, cut tubers, in drills.....	10	bush.
Radish, in drills.....	6 to 8	lbs.
Radish, broadcast.....	10	lbs.
Rye, broadcast.....	1½ to 2	bush.
Salsify, in drills.....	6 to 8	lbs.
Sorghum.....	10 to 12	lbs.
Spinach, in drills.....	8 to 10	lbs.
Turnip, in drills.....	1	lb.
Turnip, broadcast.....	2	lbs.
Vetches, broadcast.....	2 to 3	bush.
Wheat, broadcast.....	1½ to 2	bush.
Clover, 8 lbs.	} together for one acre.	
Timothy, 6 qts.		
Red Top, 1 bush.		

White Cement.—Take white (fish) glue, one pound and ten ounces; dry white lead six ounces; soft water three pints; alcohol one pint.

Dissolved the glue by putting it in a tin kettle or dish, containing the water, and set this dish in a kettle of water, to prevent the glue from being burned, when the glue is all dissolved, put in the lead and stir and boil until it is thoroughly mixed; remove from the fire, and when cool enough to bottle, add the alcohol, and bottle while it is yet warm, keeping it corked. This last recipe has been sold about the country for from twenty-five cents to five dollars, and one man gave a horse for it.

A Cold Cement for Mending Earthenware, says a recent English work, reckoned a great secret among workmen, is made by grating a pound of old cheese, with a bread grater, into a quart of milk, in which it must be left for a period of fourteen hours. It should be stirred quite often. A pound of unslaked lime, finely pulverized in a mortar, is then added, and the whole is thoroughly mixed by beating. This done, the whites of twenty-five eggs are incorporated with the rest, and the whole is ready for use. There is another cement for the same purpose which is used hot. It is made of resin, beeswax, brick-dust, and chalk boiled together. The substances to be cemented must be heated, and when the surfaces are coated with cement, they must be rubbed hard upon each other, as in making a glue joint with wood.

Composition for Restoring Scorched Linen.—Boil, to a good consistency, in half a pint of vinegar, two ounces of Fuller's earth, an ounce of hen's dung, half an ounce of cake soap, and the juice of two onions. Spread this composition over the whole of the damaged part, and if the scorching is not quite through, and the threads actually consumed, after suffering it to dry on, and letting it receive a subsequent good washing or two, the place will appear full as white and perfect as any other part of the linen.

Chilblain Ointment.—Take of gall-nuts, in very fine powder, one drachm avoirdupois; spermæti cerate seven drachms; mix, add pure glycerine, two drachms, and rub the whole to a uniform mass. An excellent application to obstinate broken chilblains, particularly when used as a dressing. When the parts are very painful, one ounce of compound ointment of galls may be advantageously substituted for the galls and cerate ordered above.

Magnetic Ointment.—Lard, rasins cut in pieces, and fine-cut tobacco, equal weights; simmer well together, then strain and press out all from the dregs. This is an excellent ointment for salt-rheum and other skin diseases. It is also good for piles, bruises, and cuts.

Green Salve.—White pine turpentine and lard, half pound each; honey and bees'-wax, quarter of a pound each; melt all together and stir in half an ounce of very finely pulverized verdigris. This ointment cannot be surpassed when used for deep wounds. It prevents proud flesh from forming, and keeps up a healthy discharge.

Court Plaster.—This plaster is merely a kind of varnished silk, and its manufacture is very easy. Bruise a sufficient quantity of isinglass, and let it soak in a little warm water for twenty-four hours; expose it to heat over the fire till the greater part of the water is dissipated, and supply its place by proof spirits of wine, which will combine with the isinglass. Strain the whole through a piece of open linen, taking care that the consistence of the mixture shall be such that, when cool, it may form a trembling jelly. Extend a piece of black or flesh-colored silk on a wooden frame, and fix it in that position by means of tacks or twine. Then apply the isinglass (after it has been rendered liquid by a gentle heat) to the silk with a brush of fine hair (badgers' is the best). As soon as this first coating is dried, which will not be long, apply a second; and afterward, if the article is to be very superior, a third. When the whole is dry, cover it with two or three coatings of the balsam of Peru. This is the genuine court plaster. It is pliable, and never breaks, which is far from being the case with spurious articles sold under that name.

Blood Maker and Purifier.—Mix half an ounce sulphate of maganese with one pint water. Dose, a wine-glassful three times a day. This can be used in the place of iron tonic, or in connection with it.

Dr Rheims' Healing Paper.—Make a strong tincture of capsicum-pods by steeping them for several days, in a warm place, in twice their weight of rectified spirits of wine. Dissolve gum-arabic in water to about the consistency of molasses. Add to this an equal quantity of the tincture, stirring it together with a small brush or a large camel's-hair pencil, until they are well incorporated. The mixture will be cloudy and opaque. Take sheets of silk or tissue-paper; give them with the brush a coat of the mixture; let them dry, and then give another; let that dry, and, if the surface is shining, there is enough of the peppered gum; if not, give a third coat. This paper, applied in the same way as court plaster to chilblains that are not broken, and burns that are not blistered, speedily relieves the itching and the pain. It acts like a charm, and effects a rapid cure. The same with cuts and discolored bruises. It likewise allays rheumatic pains in the joints. Its great value is that, besides acting as ordinary sticking-plaster, it abates suffering and hastens the process of healing.

Cooley's Corn Plaster.—In a piece of card, cut a round hole the size of the central portion of the corn; lay the card on a piece of adhesive plaster, and warm the spot of plaster exposed by the hole in the card, by holding a hot iron near it for a second or two; then remove the card and sprinkle some finely powdered nitrate of silver on the warm spot of the plaster. When cold, shake off the loose powder, and apply to the corn. Two or three applications seldom fail to cure.

Be Economical.—Look carefully to your expenditures. No matter what comes in, if more goes out, you will always be poor. The art is not in making money, but in keeping, it; little expenses, like mice in a barn, when there are many, make great waste. Hair by hair, heads get bald; straw by straw, the thatch goes off the cottage; and drop by drop, the rain comes in the chamber. A barrel is soon empty if the tap leaks but a drop a minute. When you mean to save, begin with your mouth; many thieves pass down the red lane. The ale jug is a great waste. In all other things keep within compass. Never stretch your legs farther than the blankets will reach, or you will soon take cold. In clothes, choose suitable and lasting stuff and not tawdry fineries. To be warm is the main thing; never mind looks. A fool may make money, but it needs a wise man to spend it. Remember, it is easier to build two chimneys than to keep one going. If you give all to back and board, there is nothing left for the savings bank. Fare hard and work hard when you are young, and you will have a chance to rest when you are old.

Carbolic Plaster.—Carbolic glycerine, thirty-four parts by weight; prepared chalk, ninety-four parts. Mix well by kneading, and enclose in closely-stoppered jars.

Irriating Plaster.—Boil together one pound tar, half an ounce burgundy pitch, one ounce white pine turpentine, and two ounces resin. Finely powder one ounce each mandrake root, blood root, poke root, and Indian turnip. Stir these into the melted tar etc., before it cools. This plaster, spread on muslin and renewed daily, will raise a sore, which is to be wiped with a dry cloth, to remove matter, etc. The sore must not be wetted. This is a powerful counter-irritant, for removing enteric pains, and in other cases where an irritating plaster is necessary.

Salve for All Wounds.—Take one pound hog's lard, three ounces white lead, three ounces red lead, three ounces bees'-wax two ounces black resin, and four ounces common turpentine; all these ingredients must be put together in a pan, and boiled three-quarters of an hour; the turpentine to be put in just before it is done enough, and give it a gentle boil afterward. This is an excellent cure for burns, sores, or ulcers, as it first draws, then heals afterward; it is excellent for all wounds.

Family Salve.—Take the root of yellow dock and dandelion, equal parts; add good proportion of celandine and plantain. Extract the juices by steeping or pressing. Strain carefully, and simmer the liquid with sweet cream or fresh butter and mutton tallow, or sweet oil and mutton tallow. Simmer together until no appearance of the liquid remains. Before it is quite cold, put it into boxes. This is one of the most soothing and healing preparations for burns, scalds, cuts, and sores of every description.

Parlor Magic.—*The Tobacco-Pipe Cannon.*—Take of Saltpetre, one ounce; cream of tartar, one ounce; sulphur, half an ounce; beat them to powder separately, then mix them together. Put a grain into a pipe of tobacco, and when it is lighted it will give the report of a musket, without breaking the pipe. By putting as much as may lie on your nail in a piece of paper, and setting fire to it, a tremendous report will be the result.

The Erratic Egg.—Have two wine-glasses. Transfer the egg from one wine-glass to the other, and back again to its original position, without touching the egg or glasses, or allowing any person or anything to touch them. To perform this trick, all you have to do, is to blow smartly on one side of the egg, and it will hop into the next glass; repeat this, and it will hop back again.

To Melt Lead in a Paper.—Wrap up in a very smooth ball of lead in a piece of paper, taking care that there be no wrinkles in it, and that it be everywhere in contact with the ball; if it be held in this state over the flame of a taper, the lead will be melted without the paper being burnt. The lead, indeed, when once fused, will not fail in a short time to pierce the paper, and of course, run through.

To Construct an Æolian Harp.—Make a box with the top, bottom, and sides of thin wood, and the ends one half an inch beech, form it the same length as the width of the window in which it is to be placed. The box should be three or four inches deep, and six or seven inches wide. In the top of the box, which acts as a sounding board, make three circular holes about two inches in diameter, and an equal distance apart. Glue across the sounding board, about two an half inches from each end, two pieces of hard wood quater of an inch thick, and half an inch high, to serve as bridges. You must now procure from any musical instrument maker twelve steel pegs similar to those of a piano-forte, and twelve small brass pins. Insert them in the following manner into the beech: first commence with a brass pin, then insert a steel peg, and so on, placing them alternately half an inch apart to the number of twelve. Now for the other end, which you must commence with a steel peg, exactly opposite the brass pin at the other end, then a brass pin, and so on, alternately, to the number of twelve; by this arrangement you have a steel peg and a brass pin always oppo-

site each other, which is done so that the pressure of the strings on the instrument shall be uniform. Now string the instrument with twelve first violin strings, making a loop at one end of each string, which put over the brass pins, and wind the other ends round the opposite steel pegs. Tune them in unison, but do not draw them tight. To increase the current of air, a thin board may be placed about two inches above the strings, supported at each end by two pieces of wood. Place the instrument in a partly opened window, and to increase the draft, open the opposite door.

USEFUL ITEMS FOR DAILY REMEMBRANCE.

Legal Brevities.—A note dated on Sunday is void. A note obtained by fraud, or from one intoxicated, is void. If a note be lost or stolen, it does not release the maker, he must pay it. An endorser of a note is exempt from liability, if not served with notice of its dishonor within twenty-four hours of its non-payment. A note by a minor is void. Notes bear interest only when so stated. Principals are responsible for their agents. Each individual in partnership is responsible for the whole amount of the debts of the firm. Ignorance of the law excuses no one. It is a fraud to conceal a fraud. It is illegal to compound a felony. The law compels no one to do impossibilities. An agreement without a consideration is void. Signatures in lead pencil are good in law. A receipt for money is not legally conclusive. The acts of one partner bind all the others. Contracts made on Sunday cannot be enforced. A contract with a minor is void. A contract made with a lunatic is void. Written contracts concerning land must be under seal.

A TABLE OF DAILY SAVINGS AT COMPOUND INTEREST.

<i>Cents per Day</i>	<i>Per Year</i>	<i>In Ten Years</i>	<i>Fifty Years</i>
2 $\frac{3}{4}$	\$ 10.....	\$ 130.....	\$ 2,900
5 $\frac{1}{4}$	20.....	260.....	5,800
11.....	40.....	520.....	11,600
27 $\frac{1}{2}$	100.....	1,300.....	29,000
55.....	200.....	2,600.....	58,000
1,10.....	400.....	5,200.....	116,000
1,37.....	500.....	6,500.....	145,000

By the above table it appears that if a mechanic, or clerk saves 2 $\frac{3}{4}$ cents per pay from the time he is twenty-one till he is seventy, the total with interest will amount to \$2,900, and a daily saving of 27 $\frac{1}{2}$ cents reaches the important sum of \$29,000. Save all you can in a prudent manner for a time of possible want, but act justly by paying all your debts, and liberally by assisting those in need, and helping in a good cause.

Act Well Your Part, Don't be Selfish.—Remember that it is by imparting happiness to others, and making ourselves useful, that we receive happiness. Stand by this truth, live it out, and always keep doing something useful for the common good, doing it well, and acting sincerely. Endeavor to keep your heart in the attitude of cherishing good will to all, thinking and speaking evil of no one, and always with a kind word for every body. Selfishness is its own curse; it is a starving vice. The man who does no good gets none. He is like the heath in the desert, neither yielding fruit nor seeing when good cometh, a stunted dwarfish, miserable shrub. Let all your influence be exerted for the purpose of doing all you can for the common good and individual welfare of every one.

Children and Home Conversation.—Children hunger perpetually for new ideas. They will learn with pleasure from the lips of parents what they deem drudgery to learn from books, and even if they have the misfortune to be deprived of many educational advantages they will grow up intelligent if they enjoy in childhood the privilege of listening to the conversation of intelligent people. Let them have many opportunities of learning in this way. Be kind to them, and don't think it beneath you to answer their little questions, for they proceed from an implanted faculty which every true man and woman should take a great delight in gratifying.

Home after Business Hours.—Happy is the man who can find that solace and that poetry at home. Warm greetings from loving hearts, fond glances from bright eyes, and welcome shouts of merry hearted children, the many thousand little arrangements for comfort and enjoyment, that silently tell of thoughtful and expectant love, these are the ministrations that reconcile us to the prose of life. Think of this ye wives and daughters of business men! Think of the toils, the anxieties, the mortification and wear that fathers undergo to secure for you comfortable homes, and compensate them for their toils by making them happy by their own fireside.

On Profane Swearing.—Let every man do his best to discountenance this abominable habit, and shun it as an accursed sin in every possible way. No respectable person will allow himself to be guilty of it. Business men who make a practice of it will find themselves avoided by the best class of customers, for I know that some persons can suffer no mental punishment equal to that inflicted by being compelled to listen to profane language. Besides, every man known as a profane swearer, will not be credited by those whose good opinion is worth having, even when he may be speaking the truth.

To Construct a Metronome.—Take a cheap clock movement and substitute for the pendulum a wire with a sliding weight, marking the wire with a file at the different points of graduation. Used to indicate the proper time in music.

Corns.—A thickened state of the scarf-skin, caused by pressure or friction. The part of the skin acted upon becomes hard, and presses upon the sensible skin within, which, endeavoring to relieve itself, produces an additional quantity of scarf-skin. Treatment.—Soak the feet in warm water, pare the top of the corn, and apply one of the following solvents: 1. Lunar caustic. Moisten the corn, and rub it with the caustic. 2. Nitric acid, applied with a rod or stick. 3. Strong solution of sub-carbonate of potash. The corn is gradually eaten away and disappears.—As corns are the result of friction, they may be prevented or driven away at an early stage by anointing them every night and morning with sweet oil, on the same principle that lubrication is applied to axle-trees, etc., to prevent friction injuring them.

Depression of Spirits.—This distressing state may depend on excessive exhaustion of nervous power, from anxiety, disappointment, or undue mental exertion. It may also originate in bilious affection or derangement of the general health, and these little causes often enter into combination with those first mentioned. Treatment.—The first thing is to turn the attention and thoughts from those objects and channels which have proved prejudicial; then endeavor to brace up the nerves, and gain tone for the general system by exercise on horseback or on foot, by regulated diet and early hours. Indolence and luxurious living should be avoided, active employment should be resorted to, and the mind engaged in some pursuit which will afford interest as well as employment. With regard to medical treatment the state of the bowels must be attended to, which in these cases are often torpid and inactive. To remedy this the following should be taken: Extract of aloes, thirty grains; Castile soap, twenty grains; oil of cloves, three drops; mix, divide into twelve pills, and take one or two for a dose, according to circumstances; or powdered aloes and powdered gum-guaiacum, of each forty grains; powdered camphor, fifteen grains; extract of henbane, half-drachm; mix, and divide into thirty pills, two to be taken when required. The diet should be nutritious and somewhat generous; meat may be eaten twice a day; and a moderate amount of stimulating fluids taken. Tea and coffee in excess should be avoided.

Weakness of Eyes.—Sulphate of copper, fifteen grains; camphor, four grains; boiling water, four ounces; mix, strain, and when cold, make up to four pints with water; bathe the eye night and morning with a portion of the mixture.

Hysterics.—This complaint is confined chiefly to females. Treatment.—A fit of hysterics is generally the result of some natural and immediate cause, and until this is discovered and removed, the patient will always be subject to these fits. When a person is siezed with a fit the dress should be loosened,

fresh air admitted, cold water dashed in the face, and salts, or singed feathers applied to the nostrils. If consciousness does not then return, a draught of sal-volatile and water should be given, and if the patient be still insensible, the temples and the nape of the neck should be rubbed with brandy. When hysterics can be traced to impaired natural action, equal portions of pennyroyal and wormwood should be steeped in boiling water, and suffered to simmer by the fire until the virtue of the herbs is extracted. It should then be allowed to cool, and half a pint be taken twice or thrice a day, succeeded on each occasion by a compound assafoetida pill, until the desired relief is afforded.

Nervousness.—This unhealthy state of system depends upon general debility. It is often inherited from birth, and as often brought on by excess of sedentary occupation, overstrained employment of the brain, mental emotion, dissipation, and excess. The nerves consist of a structure of fibres or cords passing through the entire body, branching off from, and having a connection with each other, and finally centres on the brain. They are the organs of feeling and sensation of every kind, and through them the mine operates upon the body. It is obvious therefore that what is termed the “nervous system” has an important part in the bodily functions; and upon them not only much of the health but happiness depends. *Treatment.* The cure of nervous complaints lies rather in moral than in medical treatment. For, although much good may be effected by tonics, such as bark, quinine, etc., there is far more benefit to be derived from attention to diet and regimen. In such cases, solid food should preponderate over liquid, and the indulgence in warm and relaxing fluids should be especially avoided; plain and nourishing meat, as beef or mutton, a steak or chop, together with half a pint of bitter ale or stout, forming the best dinner. Cocoa is preferable to tea; vegetables should be but sparingly eaten. Sedentary pursuits should be cast aside as much as possible, but where they are compulsory, every spare moment should be devoted to out-door employment, and brisk exercise. Early bedtime and early rising will prove beneficial, and the use of the cold shower bath is excellent. Gymnastic exercises, fencing, horse-riding, rowing, dancing, and other pursuits which call forth the energies, serve also to brace and invigorate the nervous system. It will also be as well to mingle with society; frequent public assemblies and amusements, and thus dispel that morbid desire for seclusion and quietude which, if indulged in to excess, renders a person unfitted for intercourse with mankind, and materially interferes with advancement in life.

THE HORSE.

EARLY HISTORY AND HABITS OF THE HORSE.

THE early history and origin of the horse is wrapped in obscurity and fable, and we really know little or nothing of it, except that we have reason to believe that he first came from Asia, like man, and, according to the Mosaic account, all other animals now existing; and that he was used in Egypt more than 1600 years before Christ. But with the history of the horse I shall not encumber this book, which might be enlarged to an enormous extent if this department were entered into at length. Suffice it, then, to discuss the present condition of the horse, and its more recent origin, as now existing in this country, in addition to his general habits.

The habits of the horse in all countries, and of all varieties, are pretty much alike. Wherever he is at large, he is bold but wary, and easily taking note of the approach of man to give him as wide a berth as he possibly can, or rather show him a clean pair of heels. Wild horses exist to the present day in the interior of Asia and in South America. But both the horses of the Tartars and those of La Plata are descended from domesticated animals, and can scarcely be called wild in the ordinary acceptation of the term. Indeed, the Californian horses, which are still more recently bred in a wild state from Spanish horses, are quite as wild as those described by Sir F. B. Head. From their constant state of liberty, and their roving habits, in order to obtain food and water, they are inured to fatigue, and can bear an enormous amount of long-continued fast work without failing under it, and with,

out that training which the domesticated animal must have. The walk and the gallop are the horse's natural paces, and all others are acquired ; but nothing can exceed the fiery animation and elegance of movement of the free horse, and in these two paces art has done nothing to improve his form except perhaps in slightly increasing the speed of the latter. In all countries and in every age the horse feeds upon grain or grass, though it is said that in Arabia he is occasionally supported upon camel's milk when food such as he usually lives upon is not to be had.

It may be useful to specify the terms employed to describe the principal parts of the horse. These details will not prove altogether superfluous, as some of the words we are about to explain not unfrequently occur in conversation.

The two parts of the head of the horse which correspond to the temples in a man, are above the eyes. The eyes themselves have a loose crescentiform fold of the conjunctiva at the inner angle, often erroneously called *membrana nictitans*, but it neither performs its office or possesses its muscular apparatus. The orbit, which is formed of seven bones, four cranial and three facial, contains the globe of the eye, on the inner angle of which is situated the *haw* (a). The figure attached will perfectly supply the means of verifying all these indications. The *eye-pits* (b) are deep indentations which lie between the eyes and the ear, above the eyebrows on each side.*

The *face* (c) is the front of the head from the eyes to the nostrils ; this part corresponds to the upper part of a man's nose. This name is, however, generally applied to that portion that surounds the curl or centre on the forehead from whence the hair radiates.

The neck of the horse is designated by the word *cres.* (d). it is comprised from one end to the other between the mane on the upper side, and the gullet on the lower.

The *forelock* (e) is the portion of the mane which is on the top of the head and falls over on the forehead between the eyes.

The *withers* (f) is the spot where the shoulders meet up above, between the back and the neck, at the point where the neck and the mane come to an end.

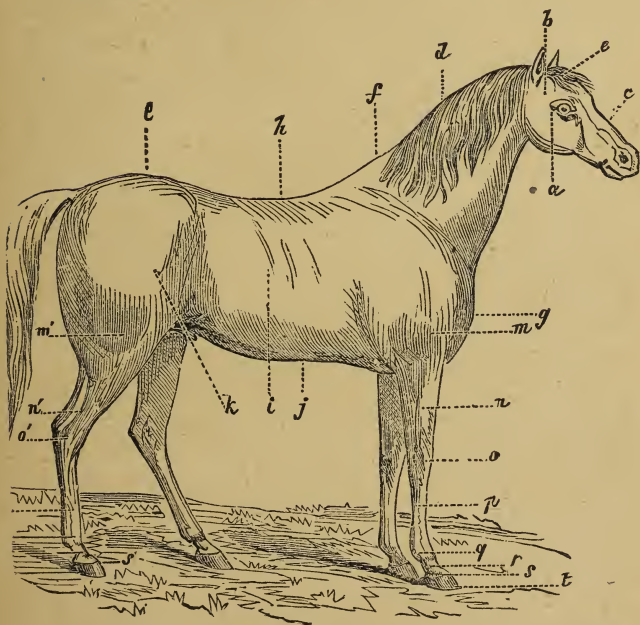
The *chest* (g) is that part which is in front between the shoulders and below the throat,

The *back* (h) commences at the withers and extends all

* The horse possesses a peculiar structure within the eye—the *tapetum lucida*—of a lustrous green color, by which he is enabled to see objects in comparative darkness, and especially under his feet.

along the spine as far as the crupper. When the horse is fat, the whole length of the spine forms a kind of hollow, which is said to be *channeled*.

The space which is included within the ribs is called the *barrel* (i); the name of the *stomach* (j) is also given to the lower part of the body which joins the *os sternum* and the bottom of the ribs.



The *flanks* lie at the extremity of the stomach, and extend as far as the hip-bones. The tail is divided into two parts; the stump or *dock*, and the hair.

The upper part of the front leg of the horse is called the *shoulder* (m), although it corresponds with the forearm in a man; the *forearm* (n) follows it lower down.

The joint which is below the forearm is called the *knee* (o); it corresponds to the place of the wrist in man, and forms an angle turning inwards when the leg is bent.

The *shank* (*p*) forms the second portion of the foreleg; it commences at the kneejoint, and corresponds to the *metacarpus* in man.

Behind the shank is a tendon, which extends from one end to the other, and is called the *back-sinew*.

The *fetlock-joint* (*q*) is the articulation immediately below the shank.

The *fetlock* itself is a tuft of hair covering a sort of soft horny excrescence, which is called the *ergot*.

The *pastern* (*r*) is the portion of the leg between the fetlock joint and the foot.

The *coronet* (*s*) is an elevation lying below the pastern, and is furnished with long hair falling over the hoof, all round the foot.

The *hoofs* (*t*) form, so to speak, the nails of the horse, and consist of a horny substance.

In order to describe the parts which make up the hind legs of the horse, we must go back to the haunches. Each of these contains the *femur*, and corresponds to the thigh of a man. It is, therefore, the thigh of the horse which is joined to the body, and bears the name of buttocks. It is terminated below and in front by the *stifle* (*k*), which is the joint of the knee containing the kneepan. It is situated below the haunch, on a level with the flank, and shifts its place when the horse walks.

The highest part of the hind leg, which is detached from the body, is called the *thigh* or *gaskins* (*m*), and corresponds to the leg of a man. It extends from the stifle and lower part of the buttocks down to the *hock* (*o*).

The hock is the joint which is below the thigh, and bends forward. This joint represents the instep in a man; the hinder part of the hock, which is called the point of the hock, is the *heel*.

Below the hock are the shank, the fetlock-joint, the pastern, and the foot, just the same as in the forelegs.

We will now say a few words as to the diversity of color in the coat of the horse, in order to fix the meaning of the terms which are generally employed to designate the various hues which the coat presents.

Bay is a reddish nut-brown color, with various shades. *Dark Bay* horses are of a very dark brown, almost black, except on the flanks and tip of the nose, where they are of a reddish color. The *golden* or *light bay* is a yellow sun-light hue. *Dappled bay* horses have on their rumps spots of a darker bay than on the rest of their bodies. In bay horses the extremities, the mane, and the tail are always black.

There are three kinds of black horses; the *rusty black*, which is of a brownish tinge, more or less conspicuous in

various lights ; the *black* and the *coal black* which is the darkest of all.

Dun colored horses, of which there are several shades, are of a yellowish sandy hue. The mane and the tail of these are either white or black. Some of the latter have a black line along the vertebra, which is called a *mule's* or *eel-stripe*.

Chestnut is a kind of reddish or cinnamon colored bay. There are several shades of it, among which are the *bright chestnut*, which is the color of a red cow's coat ; the *common chestnut*, which is neither dark nor bright ; the *bay chestnut*, which verges upon the red ; the *burnt chestnut*, which is dark and nearly approaches black. Some chestnut horses have white manes and tails ; others, black. The *roan* is a mixture of red and white.

Grey horses have white hair mixed with black or bay. There are several modifications of this color ; the *dappled grey*, the *silver grey*, the *iron grey*, &c. Dapple-grey horses have on their back and other parts of the body a number of round spots, in some cases black ; in others, of a lighter hue ; these spots are somewhat irregularly distributed. Grey horses as they increase in age become lighter in color, ultimately becoming white.

Piebald and *skewbald* horses are white, with large irregular spots and stripes of some other color irregularly arranged. The different kinds are distinguished by the color that is combined with the white, as the *piebald* proper, which are white and black ; the *skewbald*, which are white and bay ; the *chestnut piebald*, which are white and chestnut.

The horses which have small black spots on a white or grey coat are called *flea-bitten*, particularly prevalent in India among Arabs.

We have hitherto considered the wild and domestic horse in common, both as regards their structure and their color—in short, their outward appearance generally—without noticing the different breeds, which must soon occupy our attention. But before we enter upon the study of the various equine races, it is necessary to give a short explanation as to the way in which the bit regulates the paces of the horse. By this we are led to speak of the construction of the mouth, a knowledge of which is most useful.

The horse either walks, trots, gallops or ambles.

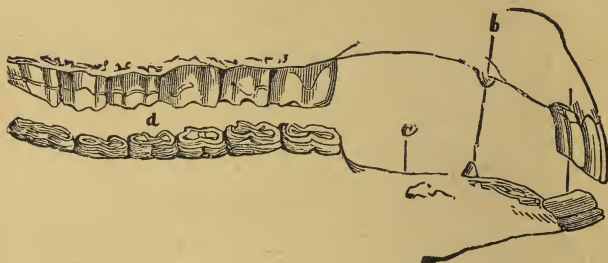
The paces of the horse are essentially modified by means both of the bit and spur. The spur excites a quickness of movement ; the bit counterbalances to this movement a due amount of precision. The mouth of the horse is so sensitive that the least exertion or the slightest impression which it

receives, warns and regulates the motion of the animal. But to preserve the full delicacy of this organ, it is highly necessary to treat tenderly its extreme sensibility.

The position of the teeth in the jaw of the horse affords to man the facility which exists of placing a bit in its mouth, by which instrument this high-spirited and vigorous animal is broken in and guided. Let us, therefore, in the first place, study the arrangement of its mouth.

There are in each jaw six incisors or foreteeth, followed on either side by a tush, which is generally deficient in mares, especially in the lower jaw. Next comes a series of six grinders on each side in both jaws; these teeth have a square crown, marked with four crescents, formed by the *laminae* of enamel which are embedded on them. Between the tushes and the grinders there is a considerable space called the *bar*, which corresponds to the angle of the lips, and it is in this interval that the bit is placed.

FIG. 1.- DENTITION OF THE ADULT HORSE.



- (a) *Incisors.* (b) *Tushes or Canines.* (c) *Interval called the Bar.*
(d) *Molars.*

It is also by means of the teeth that we are enabled to know a horse's age—a knowledge which is of the highest utility; for a horse increases in value in proportion as he approaches maturity, again decreasing in worth as he becomes older. Up to nine years the age can be determined pretty accurately by means of the changes which take place in the teeth.

The foal, at its birth, is usually devoid of teeth in the front

of the mouth, and has only two grinders on each side in each jaw (Fig. 2). At the end of a few days, the two middle fore teeth, or pincers, make their appearance. In the course of the first month a third grinder shows itself, and in four months more the two next fore-teeth also emerge; within six and a half or eight months the side incisives, or corner teeth, show, and also a fourth grinder. At this period the first dentition is complete. The changes which take place up to the age of three years depend only on the fore-teeth being worn away more or less, and the black hollows being obliterated gradually by contact with food. In thirteen to sixteen months the cavities on the surface of the pincers are effaced; they are then said to be razed. In sixteen to twenty months the intermediate fore-teeth are likewise razed, and in twenty to twenty-four months the same thing takes place with the corner teeth.

FIG. 2.



AT EIGHTEEN DAYS.

FIG. 3.



AT THREE YEARS.

The second dentition commences at the age of two and a half or three years (Fig. 3). The milk-teeth may be recognized by their shortness, their whiteness, and the construction round their base, called the neck of the tooth. The teeth which replace them have no neck, and are much larger. The pincers are the first to fall out and be replaced by new ones. At the age of from three years and a half to four years the intermediate fore-teeth experience the same change, and the lower tushes begin to make their appearance. The corner teeth are also renewed when between four and a half to five years; the upper tushes likewise pierce the gums, and about the same date the sixth grinder shows itself.

A depression, or small hollow, may be noticed on the surface of the crown of the second growth of fore-teeth, just as in the milk-teeth, and these hollows are gradually worn away in the same fashion.

The pincers of the lower jaw lose their cavities when the horse is five or six years old; the intermediate fore-teeth are the next to raze. The marks in the corner teeth are obliterated at the age of seven or eight years. The process of destruction of the marks in the upper fore-teeth goes on in the same order, but more tardily. (Figs 4 and 5).

FIG. 4.

FIG. 5.



SIX YEARS.

NINE YEARS.

When all these various changes have taken place, the horse is looked upon as aged (Fig. 7), because the teeth no longer furnish any certain indications as to the age of the animal. Only approximate inferences can now be drawn from the length and color of the tusks, which become more and more bare and projecting from the gum, &c.

The domestication of the horse appears to date back to the very earliest period of his appearance on earth; and as this animal adapts itself to every necessity, every want, and every climate, its subjection has resulted in a considerable number of races, distinguished by more or less prominent characteristics of shape, strength, temper, and endurance. Although generally intelligent, affectionate, and endowed with considerable powers of memory, these qualities in the horse are essentially modified by education and climate. And for the full development of his intelligence and his high qualities, it is

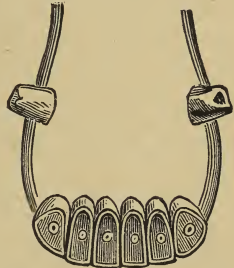
requisite that man should be his companion and his friend, as well as his master, but never his tyrant. Under the whip of an unfeeling driver, the horse becomes brutalized, and rapidly degenerates, morally even more than physically.

FIG. 6.



FIFTEEN YEARS.

FIG. 7.



THIRTY YEARS.

The attachment of the horse for those who treat it kindly is a well-known fact.

The influence of memory on the horse is shown by the sense it retains of injuries and ill-treatment it has suffered. Many a horse is restive with persons who have misused it, while perfectly docile with others, proving a consciousness of good and evil, and a natural insubordination against tyranny and injustice.

The True Way of Breaking Horses.

The first and most important thing to be accomplished is to win the horse's confidence, which may be done by uniform actions of a kindly disposition in his management. He takes man exactly for what he proves himself by actions. By kind treatment, he learns to associate with man's feeling of protection and security, and he can have no fear or doubt, because never taught to doubt by deception.

The child has confidence in his parents in proportion to the fidelity of the parents in inculcating and practising those principles of truth in his early training. But once finding them unmindful of their promises, confidence in them is correspondingly impaired. If you are faithful in fulfilling your prom-

ises to the child, he will expect exactly what you promise. Here proof becomes faith, because he has never been deceived by the want of performance. Even among men the principle is the same. That man, who is always found truthful, and who performs exactly as he promises to do, becomes a standard of public confidence and trust; but he who disregards truth and the principles of honor, becomes an object of suspicion to all knowing him. As the child, then, is the reflex of the love and truth of the parents in confidence, and the public in him of undoubted integrity—so we are forced to believe the horse becomes in the character of his habits what he is, in exact proportion to the teaching and example to which he may have been subject.

How to Feed, Water and Drive.

Do not feed or water heavy before driving, filling the stomach with water and food; water destroys the juices of the stomach, weakening digestion. The grain becomes swollen and generates a gas, filling the stomach with wind; the stomach becoming diseased, the horse will work his head into the coating of the stomach. All grain will digest best while the horse is standing still; and all food that passes off without digestion weakens the action of the stomach and bowels, and, in many cases, will scour the horse. The less you feed before driving the better. Then again, you should water very little on the road. Feed mostly at night; food will then all digest and make flesh and blood. I should advise not more than two quarts in the morning, and the same at noon. I do not feed in the morning, neither do I water. If I was going to make a long and fast drive, I should feed twelve quarts the night before, then my horse would be strong, and feel light and active, and do his work easy. By giving him a little water, the horse will fully digest what he has eaten; if you weaken the juices, of course you weaken digestion. A horse should only be fed what he can easily digest. I think by so doing you will save one third of the grain formerly given. Diseases are caused by too much food and water; the water destroys the juices, and disables digestion; by feeding most of the grain whilst the horse is at rest, it will fully digest, and leave the horse strong and able to do his work.

Giving a great amount of water, diseases the blood and deadens the hair. The water must pass in some way; it can't all pass in the urine, and it passes off through the pores of the skin, and causes the hair to become gummed, and makes the horse very hard to clean. So much water passing off through the pores of the flesh destroys the roots of the hair, and causes it to look dull and faded; then, again, you should be cautious

not to drive your horse in cold water, when warm, or throw water on him; so doing, chills the blood, separates the blood from the watery substances that the blood forms from, and causes disease, the skin will become full of small tumors and the hair fall off. By avoiding too much water on the road, and too much food before driving, and by keeping the horse warm after driving, you avoid disease.

Special Advice in Reference to Feeding Horses.

Never give a horse whole grain. Bruising and wetting it with soft water, you save thirty per cent. of its nutritious effects. Steam it in preference to wetting, if you have facilities for doing so. Feed your horse two hours before he begins his day's work. Give him the largest feed at night. Never tie him to a rack; it is cruel to thus prevent a horse from lying down when he is tired. The best way is to take away your rack altogether, and arrange your stable so as to make it unnecessary to tie up the horse. The stable should always be dry and well littered. Never give your horse hard water, if soft water is to be had. If you cannot get soft water, draw the hard water out of the well two hours before you let him drink it. Beans should be full a year old before they are fit to feed horses; they should be bruised, the same as grain, not ground.

Horse Feed Mixture.

YOUATT recommends for horse feed, the following mixture: Cut hay, two parts; cut straw, three parts—add to this a quantity of bruised beans, oats, or other grain—wet the whole with soft water, and mix it well. Do not feed your horse too much hay, as it is not only a waste of provender, but when he is put to work with an overloaded stomach it endangers his wind. If left to pull hay out of the rack at pleasure, a horse will eat or waste some thirty pounds a day, whereas, by cutting up his hay and mixing it with other feed, as above described, ten pounds is an ample abundance for twenty-four hours. Horses, when worked, should be fed three or four times a day with a mixture of hay, straw, and grain as above described. Give them their food in the manger, be careful that it is sweet and clean. By following these rules, horses will always be in good condition—will not have that swelled belly so peculiar to animals who are allowed to fill their stomachs with hay—and will usually enjoy good health.

How to get a Colt From Pasture.

Go to the pasture and walk around the whole herd quietly, at such a distance as not to cause them to scare or run. Then

approach very slowly; if they stick up their heads and seem to be frightened, hold on till they become quiet, so as not to run them before you are close enough to drive them in the direction you want them to go. When you begin to drive, do not flourish your arms or halloo, but gently follow them off, leaving the direction free you wish them to take. Thus taking advantage of their ignorance, you will be able to get them in the pound as easily as the hunter drives the quails into his net. For if they have always run in the pasture uncared for (as many horses do in prairie countries and on large plantations) there is no reason why they should not be as wild as the sportsman's birds, and require the same gentle treatment, if you want to get them without trouble; for the horse, in his natural state, is as wild as any of the undomesticated animals, though more easily tamed than most of them.

How to Stable a Colt.

The next step will be to get the horse into a stable or shed. This should be done as quietly as possible, so as not to excite any suspicion in the horse of any danger befalling him. The best way to do this, is to lead a broken horse into the stable first and hitch him, then quietly walk around the colt and let him go in of his own accord. Be extremely deliberate and slow in your movements, for one wrong move may frighten your horse, and make him think it necessary to escape at all hazards for the safety of his life—and thus make two hour's work of a ten minutes' job; and this would be all your own fault, and entirely unnecessary—for he will not run unless you run after him, nor will he try to break away unless you attempt to force him into measures. If he does not see the way at once, and is a little fretful about going in, do not undertake to drive him, but give him a little less room outside, by gently closing in around him. Do not raise your arms, but let them hang at your side, for you might as well raise a club; the horse has never studied anatomy, and does not know but they will unhinge themselves and fly at him. If he attempts to turn back, walk before him, but do not run; and if he gets past you, encircle him again in the same quiet manner, and he will soon find that you are not going to hurt him; and then you can walk so close around him that he will go into the stable for more room, and to get farther from you. As soon as he is in, remove the quiet horse and shut the door. This will be his first notion of confinement—not knowing how he got into such a place, nor how to get out of it. That he may take it as quietly as possible, see that the shed is entirely free from dogs, chickens, or anything that would annoy him. Then give a few ears of corn, and let him remain alone fifteen

or twenty minutes, until he has examined his apartment, and has become reconciled to his confinement. And now, while your horse is eating those few ears of corn, see that your halter is ready and all right, and reflect upon the best mode of operations; for in horse-breaking, it is highly important that you should be governed by some system.

Objects of Fear—How to Prevent Fear.

Whatever the horse understands to be harmless he does not fear; consequently great pains should be taken to cause him to examine and smell such things as are likely to frighten him in after life. This should be attended to in his early education, since early impressions are strong in the horse. A log or stump by the roadside, if regarded with suspicion, should be approached slowly or cautiously; to the imagination of the horse, such things are supposed to be some great beast that may spring upon him, but which he will soon comprehend to be harmless if obliged to examine its nature in his own way, by advancing to the object and allowing him to understand it fully by smelling and breathing with the nose. The boy frightened by a false face will care nothing about it after he takes it in his hands and examines it; and the principal is the same in familiarizing horses to objects of fear.

If your horse is frightened at an umbrella, you can soon learn him to be used to that. Go into the stable with him, and first let him look at the umbrella before it is opened—let him touch it with his nose. Open it a little way, and then let him see it; and finally open it wide. By ordinary patience you can soon learn the horse to have the umbrella opened suddenly in his face, without being afraid of it. By a similar treatment you can break any horse from scaring at almost anything that may look frightful to him. If you wish to make a trial of this theory, just take a horse into the stable and let him examine the frightful object a few minutes after his mode of examining things, and you will be perfectly satisfied. There is a singular fact connected with taming the horse that I would have never believed if I had not tried it. If you accustom him to any particular object by showing it to him on one side only, he will not be afraid when he sees it with the eye on that side; but he will be afraid if you approach him with it on the other side. It is, therefore, necessary to pacify him on both sides in all cases. After you have accustomed him to the umbrella, or whatever you may wish to make him familiar with, on his right side, repeat the operation on the left side in the same manner as as if you had not approached him at all.

The Kind of Halter to be Used, and How to Put It On the Colt.

Never use a rope halter. The cords of the rope are hard, and appears to aggravate and excite distrust rather than confidence; but by all means procure a leather halter made of bridle leather, so it will feel soft and pliable to the touch, and to fit tolerably tight on the head, so as not to feel uncomfortable. Before putting a halter on the colt, he must be rendered familiar with it by carressing him and permitting him to examine the article with his nose. Then place a portion of it over his head, occasionally giving it a slight pull, and in a few minutes he will be accustomed to these liberties, and then the halter may be fastened on properly. To teach him to lead is another difficulty. Stand a little on one side, rub his nose and forehead, take hold of the strap and pull gently, and at the same time touch him very lightly with the end of a long whip across his hind legs. This will make him start forward a few steps. Repeat the operation several times and he will soon learn to follow you by simply pulling the halter. The mouth of the colt should be frequently handled, after which introduce a plain snaffle between his teeth and hold it there with one hand while you caress him with the other. After a time he will allow the bridle to be placed upon him. The saddle can then be brought in and rubbed against his nose, his neck, and his legs; next hang the stirrup strap across his back, and gradually insinuate the saddle into its place. The girth should not be fastened, until he becomes thoroughly acquainted with the saddle. The first time the girth is buckled, it should be done so loosely as not to attract his attention; subsequently it can be tightened without inspiring him with fear, which, if fastened immediately, it would most certainly do. In this manner the wildest colt can be effectually subjugated by such imperceptible degrees that he gives tacit obedience before he is aware of his altered condition.

To Break a Horse to Harness.

Take him in a tight stable, take the harness and go through the same process as you would with the saddle, until you get him familiar with them, so you can put them on his back and rattle them about without his caring for them. As soon as he will bear them, put on the lines, caress him as you draw them over him, and drive him about in the stable till he will bear them over his hips. The lines are a great aggravation to some colts, and often frighten them as much as if you were to raise a whip over them. As soon as he is familiar with the harness and lines, take him out and put him by the side of a gentle

horse, and go through the same process that you did with the blinds when you are breaking a horse to harness.

After fixing the lines, then hitch the horse to a small log that he can draw very easy, with long traces, frequently turning him, so that the traces will draw lightly against his legs—frequently stopping and petting him; then hitch him to something heavier; then get behind him and drive him. By thus working with him you will make a strictly true horse of him—he also gets so that he is not afraid of the traces or harness. You can then proceed to hitch him to a buggy or waggon. Persons should not drive fast at first hitching a colt in harness he should be handled very careful at first. In handling colts in this way you will have no trouble with them, but will have a much better broke horse, and one that would be more safe for a family. A horse broken in this way is not half so easily spoiled as one broken by any other process.

In breaking horses to ride they should be handled in very much the same way as I have spoken of. After biting them sufficiently you may proceed to saddle them; then ride them over two or three miles at a time—not enough to tire them.

To Break Horses to Stand the Fire of a Gun.

You commence by administering the three articles first mentioned, in the nostrils this will prevent him from smelling the powder. Then load your pistol—but very light, so as to make the report as light as possible; every time you fire, give him a small piece of an apple, with some powder on it; then rub and pat him on the head and neck. When you first commence firing, stand close to the horse's shoulders, rest your arms on his withers. After you have fired a sufficient number of times mount the horse and shoot from his back. Keeping up this practice for a short time, the horse will get so that he will not care anything about the fire of a gun at any time or place.

Necessity of Repetition of Lessons and a Thorough Training.

The horse must be convinced by repeated proofs of being over-matched that resistance is useless. For since his willingness and rebellion are each based upon the limited reasoning of his experience, he must be thoroughly convinced by experience that unconditional submission is the only alternative; this you cannot prove to the understanding of the horse without repeating your lessons until he submits unconditionally. But as nursing and care is to the patient over the force of disease, so is the subjugation of the horse—his submission should be encouraged and rewarded by kindness, and feeding from

the hand with little presents of such things as he likes. That master is supreme in his control, and submission to his commands becomes a pleasure, who has the power to enforce his will, but who exercises it with the sweetening encouragement of love. While force is necessary, and you have the means of making your horse almost a plaything in your hands, let the silken chord of love be the cement that fixes and secures this submission to your will. A good-natured, clever man, it is admitted, can teach a horse almost anything, and it has become a proverb that kindness will lead an elephant by a hair. Show your horse exactly what you want him to do, and endeavor to use the patience and reason in teaching and controlling him, you would believe necessary for yourself to understand if placed in like circumstances. Ignorant of the language and intentions of such a teacher, who even preserved his patience, and refrained from abuse, what progress would you make as a pupil—gifted as you are with all your intelligence? If possible, ennoble and elevate your feelings by realizing your responsibility to yourself, to the community, and to the noble animal committed to your charge. Make your horse a friend by kindness and good treatment. Be a kind master, and not a tyrant—make your horse a willing servant, and not a slave.

How to Proceed with the Colt after Haltering.

The first time you halter a colt you should stand on the left side, pretty well back to his shoulder, taking hold of that part of the halter that goes around his neck, then with your two hands about his neck you can hold his head to you, and raise the halter on it without making him dodge, by putting your hands about his nose. You should have a long rope or strap ready, and as soon as you have the halter on attach this to it; so that you can let him walk the length of the stable without letting go the strap, or without making him pull on the halter, for if you only let him feel the weight of your hand on the halter, and give him more rope when he runs from you, he will never rear, pull or throw himself, yet you will be holding him all the time, and doing more towards gentling him than if you had the power to nub him right up, and hold him to one spot: because he knows nothing about his strength, and if you don't do anything to make him pull, he will never know what he can do in that way. In a few minutes you can begin to control him with the halter, then shorten the distance between yourself and the horse by taking up the strap in your hand. As soon as he will allow you to hold him by a tolerably

short strap, and to step up to him without flying back, you can begin to give him some idea about leading.

But to do this, do not go before him and attempt to pull him after you, but commence by pulling him very quietly to one side. He has nothing to brace either side of his neck, and will soon yield to a steady, gradual pull of the halter; as soon as you have pulled him a step or two to one side, step up and caress him, and then pull him again, repeating this operation until you can pull him in every direction, and walk about the stable with him; this you can do in a few minutes, for he will soon think when you have made him step to the right and left a few times, that he is compelled to follow the pull of the halter, not knowing that he has the power to resist your pulling; besides you have handled him so gently that he is not afraid of you, but rather likes you. After you have given him a few lessons of this kind, at proper intervals, he will be so tame that if you turn him out to pasture, he will come up to you to be carressed every opportunity he gets.

While training him in the stable, you should lead him about some time before you take him out, opening the door, so that he can see out, leading him up to it and back again, and then past it. See that there is nothing on the outside to make him jump when you take him out, and as you go out with him, try to make him go very slowly, catching hold of the halter close to the jaw with your left hand, while the right is resting on the top of his neck, holding to his mane. Do not allow anyone to be present or in sight, during your operations, either in or outside the stable. If you are entirely alone, and manage your colt rightly, you will soon be able to lead and hold him as easily as you could a horse already broken.

Do not Try to Force the Colt if Excited.

When excited the colt is not in a condition to understand what you require of him, or to be submissive. You should also be careful not to train the colt until he becomes heated and confused. But little should be required at a time, and hold to that point until you gain it thoroughly before you undertake to do more. For example: in making a colt follow, if he submits ever so little, caress and reward him for it, and so continue and you will have no trouble.

When you resort to force do it sharply, so as to impress him as much as possible with your power.

How to Proceed if a Colt is Stubborn.

If the animal you are operating upon seems to be a stubborn or mulish disposition rather than wild; if he lay back his ears as you approach him, or turn his heel to kick you, he has not

that regard or fear of man that he should have, to enable you to handle him quickly and easily; and it might do well to give him a few sharp cuts with the whip, about the legs, pretty close to the body. It will crack keen as it plies about the legs, and the crack of the whip will affect him as much as the stroke; besides, one sharp cut about the legs will affect him more than two or three over the back, the skin on the inner part of the legs or about his flanks being thinner, and more tender than on his back. Do not whip him much, only just enough to scare him; it is not to hurt the horse that we whip him; we do it to scare bad disposition out of him. But whatever you do, do quickly, sharply and with a good deal of fire, but always without anger. If you go to scare him at all, you must do it at once. Never go into a pitched battle with your horse, and whip him until he is mad, and will fight you: you had better not touch him at all, for you will establish, instead of fear and regard, feelings of resentment, hatred, and ill-will. It will do him no good, but harm, to strike him, unless you frighten him; if you succeed in frightening him, you can whip him without making him mad; for fear and anger never exist together in the horse, and as soon as one is visible, you will find that the other has disappeared. As soon you have frightened him, so that he will stand up straight and pay some attention to you, approach him again and caress him a good deal more than you whipped him; thus you will excite the two controlling passions of his nature, love and fear; he will love, and fear you too; and as soon as he learns what you require, he will obey quickly.

If the colt is of too mulish a disposition to yield to careful and gentle treatment, as here given, you must resort to the several measures recommended for taming vicious horses.

To Make a Colt Follow Under the Whip.

After the colt comes around to you readily by pulling a little on the halter, and follows freely, take your whip in the right hand; pull upon the halter a little saying: "Come here, Sir!" And at the same time tap lightly with the whip over the hips; he will come to you mainly because you have taught him to yield to a slight pull upon the head, and will come to you at this signal, and because he wishes to get away from the touch of the whip behind. As soon as he comes to you, caress him and feed him from the hand with something he likes; repeat this, each time pulling upon the halter, until he will come to you as readily by tapping with the whip as he did at first to the halter. Now, instead of hitting with the whip, commence by snapping it behind him; if he comes, caress and encourage as before, and so repeat, at each time increasing the

distance from him, until he will follow or come to you quickly by cracking the whip.

A few lessons of the foregoing kind, will make him run after you, when he sees the motion of the whip—in twenty or thirty minutes he will follow you around the stable. After you have given him two or three lessons in the stable, take him in a small lot and train him; and from thence you can take him into the road, and make him follow you anywhere and run after you.

How to Make a Horse Stand Still Without Hitching.

After you have well broken him to follow you, stand him in the centre of the stable—begin at the head to caress him, and gradually work backwards. If he moves, give him a cut with the whip, and put him back to the same spot from where he started. If he stands, caress him as before, and continue gentling him in this way until you can get around him without making him move. Keep walking round him, increasing your pace, and only touch him occasionally. Enlarge your circle as you walk around, and if he then moves, give him another cut with the whip and put him back to his place. If he stands, go to him frequently and caress him, and then walk round him again. Do not keep him in one position too long at a time, but make him come to you occasionally and follow you round the stable. Then stand him in another place, and proceed as before. You should not train him more than an hour at a time.

How to Lead a Colt with a Broke Horse.

If you should want to lead your colt by the side of another horse, you must first put the horse into a stable with the colt. You first attach a second strap to the colt's halter, and lead your horse up along side of him. Then get on the broke horse, and take one strap round his breast under the martingale, (if he has any on), holding it on your left hand. This will prevent the colt from getting back too far; besides you have more power to hold him, with the strap pulling against the horse's breast. The other strap take up in your right hand to prevent him from running ahead; then turn him about in the stable, and if the door is wide enough, ride out with him in that position; if not, take the broke horse out first, and stand his breast up against the door, then lead the colt to the same spot and take the straps as before directed, one on each side of his neck, and then let some one start the colt out, and as the colt comes out, turn your horse to the left, and you will have them right. You can manage any kind of a colt this

way, without trouble; for, if he tries to run ahead or pull back, the two straps will bring the two horses facing each other, so that you can very easily follow up his movements without doing much holding, and as soon as he stops running backward, you are right with him and all ready to go ahead. If he gets stubborn and does not want to go, you can remove all his stubbornness by riding your horse against his neck, thus compelling him to turn to the right; and as soon as you have turned him about a few times, he will be willing to go along. The next thing, after you are through leading him, will be to take him into a stable and hitch him in such a way as not to have him pull on the halter.

How to Lead a Colt into a Stable.

You should lead a broken horse into the stable first, and get the colt, if you can to follow in after him. If he refuse to go, step up to him, taking a little stick or switch in your right hand; then take hold of the halter close to his head with your left hand, at the same time reaching over his back with your right arm so that you can tap him on the opposite side with your switch; bring him up facing the door, tap him slightly with your switch, reaching as far back with it as you can. This tapping, by being pretty well back, and on the opposite side, will drive him ahead, and keep him close to you; then by giving him the right direction with your left hand you can walk into the stable with him. I have walked colts into the stable this way in less than a minute, after men had worked at them half an hour, trying to pull them in. If you cannot walk him in at once in this way, turn him about and walk him around awhile until you can get him up to the door without pulling at him. Then let him stand a few minutes, keeping his head in the right direction with the halter, and he will soon walk in of his own accord. Never attempt to pull the colt into the stable; that would make him think at once that it was a dangerous place, and if he was not afraid of it before, he would be then. Besides, we do not want him to know anything about pulling on the halter. If you want to tie up your colt, put him in a tolerably wide stall, which should not be too long, and should be connected by a bar or something of that kind to the partition behind it; so that, after the colt is in he cannot go far enough back to take a straight, backward pull on the halter; then by tying him in the centre of the stall, it would be impossible for him to pull on the halter, the partition behind preventing him from going back, and the halter in the centre checking him every time he turn to the right or left. In a stall of this kind you can break any horse to stand tied with a light strap, anywhere, without his ever know-

ing anything about pulling. For if you have broken your horse to lead, and have taught him the use of the halter (which you should always do before you hitch him to anything), you can hitch him in any kind of a stall, and if you give him something to eat to keep him up to his place for a few minutes at first, there is not one colt in fifty that will pull on his halter, or ever attempt to do so.

This is an important feature in breaking the colt, for if he is allowed to pull on the halter at all, and particularly if he finds out that he can break the halter, he will never be safe.

THE EUREKA BRIDLE.

The most powerful means of learning a colt to lead is by the use of what is designated or called the EUREKA BRIDLE.

How to Make the Eureka Bridle.

Take a cotton cord made of fine yarn such as is sometimes used for a bed cord or clothes line, usually about three eighths of an inch thick. If you cannot get cotton cord, hemp or anything of the kind that is strong enough will answer the purpose. Let it be about fifteen feet long, tie one end into a hard knot, just as you would to prevent its raveling; tie another knot about ten inches or a little more from the one on the end, but before you draw it tight, put the knot on the end through. You have now a loop that will not slip, made on the same principle that a rope is tied around the neck of a horse to hitch with, so as not to tighten upon the neck by pulling upon it. This loop should be just large enough to slip over the under jaw of the horse you wish to train; put this loop over the lower jaw, then, while standing on the near side, take the cord in the left hand and bring over the neck by passing the left hand under the neck to the opposite side towards the mane, bring the right hand over the neck and take the cord from the left and pass back to the loop, and put through from the top side, until the part over the neck is drawn down like a check-rein; now take hold of the end of the rein, and you will find you have a means of power in it that makes the strongest horse almost a plaything in your hands.

The objection to the use of the Eureka Bridle in the training of the innocent colt, is, that the ignorant are inconsiderate in its use. Instead of using it with the utmost mildness a little resistance on the part of the colt is made an excuse to use

it in the most severe manner, until the colt either submits unconditionally, or becomes so desperate with pain as to be entirely reckless and regardless of the utmost efforts.

When your horse resists too much you will always find it to your advantage to put him away for a short time until he becomes cool. In fact, the great secret of training is in not training too long, and repeating. If you intend using the Eureka Bridle as a means of subduing your colt, put it on after you tamper him on three legs, with the strap over the back. As soon as he submits cleverly to this step, instead of fastening up the leg as by the method already described, take off your strap. Then put on the Eureka Bridle gently, when step to one side and back, and say, "Come here, sir!" pulling a very little upon the bridle, just enough to bring his head towards you a little. Now step up to him and pat him on the neck, and say, "You are a fine fellow." Then try again in the same way, and so repeat until he will come to you quite freely. You may increase your force upon the bridle in proportion to his submission, but not if he show stubbornness. You may then step to the other side and repeat the lesson until he will come to you either way cheerfully. Now you wish him to follow you; continue your training in this way, gradually pulling a little more on a line with his body, until he will follow as well ahead as he does sideways.

How to Break Horses to Ride.

If a colt, you must first supple the muscles of the back before permitting much weight to be carried. You must keep in mind that he is not accustomed to carry weight, and that to put one hundred and fifty pounds on would be entirely wrong. You must give the colt to understand that you are his friend. It will require but a few days to supple the muscles of the neck and back; then you have a horse that will guide easily. After the first three days, the horse will carry one hundred and twenty-five pounds easier than at first he would carry forty.

You will now fasten the saddle on, but not too far forward; buckle the girths tight, and let him remain a few moments; then approach him gently, pat him on the neck, and draw up the reins tight. with the left hand to the withers; put the foot in the stirrup, and bear gently on the saddle, then pat him gently on the back and rump, speaking very low during the time. Then rise gently, throwing the right leg over the saddle, and sit perfectly still for a few moments; then dismount and caress him, patting his head and back, after doing so a few times he will be as submissive as a lamb.

As to Handling the Feet of a Horse.

Should the colt refuse to have his feet handled, he may be made to submit by reproof with the bridle and putting a small strap on the hind foot, then pull on this strap and bring the foot up; then at the moment he kicks, bring down on the mouth sharply with the bridle. In a short time he will submit to your control unconditionally. The same principle applies to the use of this under all circumstances. It is a means of reproof, and certainly has a powerful effect upon a horse.

How to Teach a Horse to Pace.

First take nine or ten pound of lead, divide in four parts, equal to three and three-quarter inches, by four and a half in size; make two holes in each end of these leads, then fasten two of them together and have them padded. Then fasten them on the horse's legs, one on each hind leg, just above the ankle joint. Ride your horse briskly with those weights upon his ankles, at the same time pulling each rein of the bridle alternately. By this means you immediately throw him into a pace. After you have in this way trained him to some extent, change your leaden weights to something lighter; leather paddings, or something equal to it will answer the purpose. Let him wear those weights until he is perfectly trained. By adopting this plan, you will speedily make a smooth and easy pacer of any horse.

Management of Wild Horses.

Cause your horse or colt to be put in a small yard, stable, or room. If in a stable or room, it ought to be large in order to give some exercise with the halter before you lead him out. If the horse belongs to that class which only appears to fear man, you must introduce yourself gently into the stable, room, or yard where the horse is. He will naturally run from you, and frequently turn his head towards you; but you must walk about extremely slow and softly, so that he can see whenever he turns his head towards you which he never fails to do in a short time—in a quarter or half an hour. I never knew one to be much longer without turning his head towards me. At the very moment he turns his head, hold out your left hand towards him, and stand perfectly still, keeping your eyes upon the horse, watching his motions, if he make any. If the horse does not stir for ten or fifteen minutes, advance as slowly as possible, and without making the least noise, always holding out your left hand. If the horse makes the least motion when you advance towards him, stop and remain perfectly still until

he is quiet. Remain a few moments in this condition, and then advance again in the same slow and almost imperceptible manner. If the horse then stirs again, stop without changing your position. It is very uncommon for the horse to stir more than once after you begin to advance; yet there are some exceptions. He generally keeps his eyes steadfast upon you, until you get near enough to touch him on the forehead. When you are thus near to him, raise slowly and by degrees your hand, and let it come in contact with that part just above the nostrils, as possible. If the horse flinches (as many will), repeat with great rapidity these light strokes upon the forehead, going a little further up towards his ears by degrees, and descending with the same rapidity until he will let you handle his forehead all over. Now let the strokes be repeated with more force over all his forehead, descending by lighter strokes to each side of his head, until you can handle that part with equal facility. Then touch in the same light manner, making your hands and fingers play around the lower part of the horse's ears, coming down now and then to his forehead, which may be looked upon as the helm that governs all the rest.

Having succeeded in handling his ears, advance towards the neck, with the same precautions and in the same manner; observing always to augment the force of the strokes whenever the horse will permit it. Perform the same on both sides of the neck, until he lets you take it in your arms without flinching.

Proceed in the same progressive manner to the sides, and then to the back of the horse. Every time the horse shows any nervousness, return immediately to the forehead, as the true standard, patting him with your hands, and thence rapidly to where you had already arrived, always gaining ground a considerable distance farther on every time this happens. The head, ears, neck, and body being thus gentled, proceed from the back to the root of the tail.

This must be managed with dexterity, as a horse is never to be depended on that is skittish about the tail. Let your hand fall lightly and rapidly on that part next to the body a minute or two, and then you will begin to give it a slight pull upwards every quarter of a minute. At the same time you continue this handling of him, augment the force of the strokes as well as the raising of the tail, until you can raise it and handle it with the greatest ease, which commonly happens in a quarter of an hour in most horses, in others almost immediately, and in some much longer. It now remains to handle all his legs; from the tail come back again to the head—handle it well, as likewise the ears, breast, neck, etc., speaking now

and then to the horse. Begin by degrees to descend to the legs, always ascending and descending, gaining ground every time you descend until you get to his feet.

Talk to the horse while you are thus taming him ; let him hear the sound of your voice, which at the beginning of the operation, is not quite so necessary, but which I have always done in making him lift up his feet. "Hold up your foot," you will say, at the same time lifting up his foot with your hand. He soon becomes familiar with the sounds, and will hold up his foot at command. Then, proceed to the hind feet, and go on in the same manner; and in a short time the horse will let you lift them, and even take them up in your arms.

All this operation is no magnetism, no galvanism; it is merely taking away the fear that the horse generally has of man, and familiarizing the animal with his master. As the horse doubtless experiences a certain pleasure from this handling, he will soon become gentle under it, and show very marked attachment to his keeper.

The Kind of Bit to Use and How to Use It.

To accustom a colt to the bit, you should use a large, smooth snaffle, so as not to hurt his mouth, with a bar at each side to prevent it from pulling through either way. This should be attached to the headstall of your bridle, and put it on your colt without any reins to it, and let him run loose in a large stable or shed some time, until he becomes a little used to the bit, and will bear it without trying to get it out of his mouth. Repeat this several times before you do anything more with the colt; and as soon as he will bear the bit, attach a single rein to it, without any martingale. You should also have a halter on your colt, or a bridle made after the fashion of a halter, with a strap to it, so that you can hold or lead him about without pulling much on the bit.

Farmers often put biting harness on a colt the first thing they do to him, buckling it on as tight as they can draw it, to make him carry his head high, and then turn him out in a lot to run half a day at a time. This is one of the very worst punishments they can inflict on a colt, and is very injurious to a young horse that has been used to running in pasture with his head down. I have seen colts so injured in this way that they never got over it.

A horse should be well accustomed to the bit before you put on the biting harness, and when you first bit him you should only rein his head up to the point where he naturally holds it, let that point be high or low; he will soon learn that he cannot lower his head, and that raising it a little will loosen the bit in

his mouth. This will give him an idea of raising his head to loosen the bit, and then you can draw the biting a little tighter every time you put it on, and he will still raise his head to loosen it. By this means you will gradually get his head and neck in the position you want him to carry it, and give him a nice and graceful carriage without hurting him, making him mad, or causing his mouth to get sore. Horses that have their heads drawn up tightly, should not have the biting on more than fifteen minutes at a time.

How to Make a Biting Bridle for an Unruly Horse.

Take the Eureka Bridle, already described, and fix a loop upon the other end, just like that already used to put around the jaw, but big enough to go over the head and fit over the neck, rather tight, where the collar is worn. Now bring your cord forward, put through the mouth from the off side, and bring back on the near side and put through the loop around the neck. Pull upon this cord, and the head will be drawn back to the breast. You are now prepared to bit. Simply pull upon the cord a little, which will draw the head back slightly; after holding for a short time, render loose; then draw up a little tighter, and so repeat for four or five minutes. Then stop biting and repeat at some future time till you have the horse entirely under your control.

How to Saddle a Colt.

Any one man who has this theory, can put a saddle on the wildest horse that ever grew, without any help, and without scaring him. The first thing will be to tie each stirrup strap into a loose knot, to make them short and prevent the stirrups from flying about and hitting him. Then double up the skirts and take the saddle in your right arm, so as not to frighten him with it when you approach. When you get to him, rub him gently a few times with your hand, then raise the saddle very slowly, until he can see it, and smell, and feel it with his nose. Then let the skirts loose, and rub it very gently against his neck the way the hair lays, letting him hear the rattle of the skirts as he feels them against him, each time a little further backward, and finally slip it over on his back. Shake it a little with your hand, and in less than five minutes you can rattle it about over his back as you please, and pull it off and throw it on again, without his paying much attention to it.

As soon as you have accustomed him to the saddle, fasten the girth. Be careful how you do this. It often frightens the colt when he feels the girth binding him, and making the saddle fit tight on his back. You should bring up the girth

very gently, and not draw it too tight at first, just enough to hold the saddle on. Move him a little, and then girth it as tight as you choose, and he will not mind it.

You should see that the pad of your saddle is all right before you put it on, and that there is nothing to make it hurt him, or feel unpleasant to his back. It should not have any loose straps on the back part of it, to flap about and scare him. After you have saddled him in this way, take a switch in your right hand to tap him up with, and walk about in the stable a few times with your right arm over your saddle, taking hold of the reins on each side of his neck with your right and left hands, thus marching him about in the stable until you teach him the use of the bridle and can turn him about in any direction, and spot him by a gentle pull of the rein. Always caress him, and loose the reins a little every time you stop him.

You should always be alone, and have your colt in some light stable or shed the first time you ride him; the loft should be high so that you can sit on his back without endangering your head. You can teach him more in two hours' time in a stable of this kind, than you could in two weeks in the common way of breaking colts, out in an open place. If you follow my course of treatment, you need not run any risk, or have any trouble in riding the worst kind of horse. You take him a step at a time, until you get up a mutual confidence and trust between yourself and horse. First teach him to lead and stand hitched; next acquaint him with the saddle, and the use of the bit; and then all that remains is to get on him without scaring him, and you can ride him as well as any horse.

How to Mount a Colt.

First gentle him well on both sides, about the saddle and all over, until he will stand still without holding, and is not afraid to see you anywhere about him. As soon as you have him well gentled, get a small block about one foot or eighteen inches in height, and set it down by the side of him, about where you want to stand and mount him; step up on this, raising yourself very gently. Horses notice every change of position very closely, and if you were to step up suddenly on the block, it would be very apt to scare him; but by raising yourself gradually on it, he will see you without being frightened, in a position very near the same as when you are on his back. As soon as he will bear this without alarm, untie the stirrup strap next to you, and put your left foot in the stirrup, and stand square over it, holding your knee against the horse, and your toe out, so as to touch him under the fore-shoulder with the toe of your boot. Place your right hand on the front of the

saddle, and on the opposite side of you, taking hold of a portion of the mane and reins (they hang loosely over his neck), with your left hand, then gradually bear your weight on the stirrup and on your right hand, until the horse feels your whole weight on the stirrup; repeat this several times, each time raising yourself a little higher from the block, until he will allow you to raise your leg over his croup, and place yourself in the saddle. Another, and in some cases a better way of mounting, is to press the palm of your right hand on the off-side of the saddle, and as you rise lean your weight on it. By this means you can mount with the girths loose, or without any girths at all.

There are three great advantages in having a block to mount from. First, a sudden change of position is very apt to frighten a young horse that has never been handled; he will allow you to walk to him, and stand by his side without scaring at you, because you have gentled him to that position; but if you get down on your hands and knees and crawl towards him, he will be very much frightened; and upon the same principle, he would frighten at your new position if you had the power to hold yourself over his back without touching him. Then, the first great advantage of the block is to gradually gentle him to that new position in which he will see you when you ride him. Secondly, by the process of holding your weight in the stirrups, and on your hand, you can gradually accustom him to your weight, so as not to frighten him by having him to feel it all at once. And, in the third place, the block elevates you so, that you will not have to make a spring in order to get on the horse's back, but from it you can gradually raise yourself into the saddle. When you take these precautions, there is no horse so wild but that you can mount him without making him jump. I have tried it on the worst horses that can be found, and have never failed in any case. When mounting, your horse should always stand without being held. A horse is never well broke when he has to be held with a tight rein when mounting; and a colt is never so safe to mount as when you see that assurance of confidence and absence of fear, which cause him to stand without holding.

How to Ride a Colt.

When you want a colt to start, do not touch him on the side with your heel, or do anything to frighten and make him jump. At once speak to him kindly, and if he does not start, pull him a little to the left until he does so, then let him walk off slowly with the reins loose. Walk him around in the stable a few times until he gets used to the bit, you can turn him about in every direction and stop him as you please. It will be well to

get on and off a good many times until he gets perfectly used to it before you take him out of the stable. After you have trained him in this way, which should not take more than two or three hours, you can ride him anywhere you choose without ever having him jump or make an effort to throw you.

When you first take him out of the stable, be very gentle with him, as he will feel a little more at liberty to jump or run, and be easier frightened than he was while in the stable; but will nevertheless find him pretty well broke, and will be able to manage him without trouble or danger.

When you first mount a colt, take a little the shortest hold on the left rein, so that if anything frightens him, you can prevent him from jumping by pulling his head round to you. This operation of pulling a horse's head round against his side will prevent him from jumping ahead, rearing up, or running away. If he is stubborn and will not go, you can make him move by pulling his head around to one side. When whipping him would have no effect. Turning him around a few times will make him dizzy, and then by letting him have his head straight, and giving him a little touch with the whip, he will go along without any trouble.

Never use martingales on a colt when you first drive him every movement of the hand should go right to the bit in the direction in which it is applied to the reins, without a martingale to change the direction of the force applied. You can guide the colt much better without it, and teach him the use of the bit in much less time. Besides, martingales would prevent you from pulling his head round if he should try to jump.

After your colt has been ridden until he is gentle and well accustomed to the bit, you may find it an advantage, if he carries his head too high or his nose too far out, to put martingales on him.

You should be careful not to ride your colt so far at first as to heat, worry, or tire him. Get off as soon as you see he is a little fatigued; gentle him and let him rest; this will make him kind to you, and prevent him getting stubborn or mad.

Foot Strap, and How to Use It.

Take a common strap or rope about the size of the Eureka Bridle. The Eureka bridle will do by untying one of the loops. Fasten the end untied carefully to the forward foot, below the fetlock. Pass the other end over the bellyband of the harness and carry it back on the left side to the sulky over the hold-back strap of the breechen, and hold as a third rein in your hand. You have in this strap or cord, connected with the foot

in this way, a means of control, with which you can almost as easily as if a plaything, control a horse while moving in the harness, and embodies one of the most valuable and effective means of controlling a horse in harness yet demonstrated. If the horse attempts to run away, simply pulling upon your strap throws him instantly upon three legs, and he has to stop. If he attempt to run back, the same remedy stops him. If he attempts to kick, you attract his attention forward instantly, and at the same time make it impossible for him to kick.

How to Prevent a Horse Running Away.

Put on the foot strap, and when he attempts to run take up his foot, make him run, and tripping every time he will not stop instantly at the word "Whoa." Should he be of the extremely wilful character, he may run on three legs. If you mistrust so, attach another strap to the opposite foot. Then make him run, and if he will not run for the taking up the second, which will destroy his confidence at once, when one strap will answer just as well. Make your lesson thorough, so that the horse will stop every time you call "whoa."

Although we have given a powerful means of coercion and of impressing the horse of his inability to resist the will of man, still practical and thorough as are those means, they are but of little account if not used with prudence and judgment.

How to Make a Horse Lie Down.

Everything we want to teach the horse must be commenced in such way as to give him an idea of what we want him to do, and then be repeated till he learns it perfectly. To make a horse lie down, bend his left fore-leg and slip a loop over it, so that he cannot let it down. Then put a surcingle around his body, and fasten one end of a long strap around the other fore-leg, just above the hoof. Place the other end under the before-described surcingle, so as to keep the strap in the right direction; take a short hold of it with your right hand; stand on the left side of the horse; grasp the bit in your left hand, pull steadily on the strap with your right; bear against his shoulder till you cause him to move. As soon as he lifts his weight, your pulling will raise the other foot, and he will have to come on his knees. Keep the strap tight in your hand, so that he cannot straighten his leg if he rises up. Hold him in this position, and turn his head towards you; bear against his side with your shoulder, not hard, but with a steady, equal pressure, and in about ten minutes he will lie down. As soon as he lies down, he will be completely conquered, and you can

hand^{le} him as you please. Take off the straps, and straighten out his legs; rub him lightly about the face and neck with your hand the way the hair lies; handle all his legs, and after he has lain ten or twenty minutes, let him get up again. After resting him a short time, make him lie down as before. Repeat the operation three or four times, which will be sufficient for one lesson. Give him two lessons a day, and when you have given him four lessons, he will lie down by taking hold of one foot. As soon as he is well broken to lie down in this way, tap him on the opposite leg with a stick when you take hold of his foot, and in a few days he will lie down from the mere motion of the stick.

Kicking in Stall.

To cure a horse of this habit put on the saddle part of a carriage harness, and buckle on tightly. Then take a short strap, with a ring attached, and buckle around the forward foot below the fetlock. To this short strap attach another strap, which bring up and pass through the turret; then return to the foot and run through the ring in the short strap. Then pass over the bellyband and tie to the hind leg, below the fetlock. With this attachment on each side, the moment the horse kicks he pulls his feet from under and trips himself upon his knees, which he will be very careful not to do but a few times.

How to Tame a Horse with Vicious Habits.

Having given full instructions relative to system of dealing with young colts, I will now proceed to detail the plan of operations for taming and subduing wild or vicious horses. The principles of this method are the same as those in management of colts—kindness and gentleness—but the practice differs. When you desire to subdue a horse that is very wild, or has a vicious disposition, take up one fore-foot and bend his knee till his hoof is bottom upwards, and nearly touching his body; then slip a loop over his knee, and shove it up until it comes above the pastern-joint, to keep it up, being careful to draw the loop together between the hoof and pastern-joint with a second strap of some kind to prevent the loop from slipping down and coming off. This will leave the horse standing on three legs; you can now handle him as you wish, for it is utterly impossible for him to kick in this position. There is something in this operation of taking up one foot, that conquers a horse quicker and better than anything else you can do to him; and there is no process in the world equal to it to break a kicking horse, for by conquering one member, you conquer to a great extent, the whole horse.

You can do anything you wish with the horse in this condition, as when he becomes convinced of his incapacity to cope with man, he will abandon all antagonistic demonstrations, and become willing to obey, and be generally docile. Operate on your horse in this manner as often as the occasion requires, and you will soon find him as gentle as his nature will permit him to be. By these means the most vicious, uneasy, unruly, or fretful horse may be cured, though it depends upon the age and disposition of the animal how long it will take to make him amiable. When you first fasten up a horse's foot, he will sometimes get very mad, and strike with his knee, and try every possible way to get it down; but as he cannot do that he will soon give up.

Conquering a horse in this manner is better than anything else you could do, and leaves him without any possible danger of hurting himself or you either; for after you have tied up his foot you can sit down and look at him until he gives up. When you find he is conquered, go to him, let down his foot, rub his leg with your hand, caress him, and let him rest a few minutes; then put it up again. Repeat this a few times, always putting up the same foot, and he will soon learn to travel on three legs so that you can drive him some distance. As soon as he gets a little used to this way of traveling, put on your harness and hitch him to a sulky. If he is the worst kicking horse that ever raised a foot, you need not be fearful of his doing any damage while he has one foot up; for he cannot kick, neither can he run fast enough to do any harm. And if he is the wildest horse that ever had harness on, and has run away every time he has been harnessed, you can now hitch him to a sulky and drive him as you please. If he wants to run, you can let him have the lines, and the whip too, with perfect safety; for he can go but a slow gait on three legs, and will soon be tired and ready to stop; only hold him enough to guide him in the right direction, and he will soon be tired and willing to stop at the word. Thus you will effectually cure him at once of any further notion of running off.

Kicking horses have always been the dread of everybody; you always hear men say, when they speak about a bad horse, "I don't care what he does, so he don't kick." This new mode is an effectual cure for that worst of all habits. There are plenty of ways by which you can hitch a kicking horse and force him to go, though he kicks all the time; but this does not have any good effect towards breaking him, for we know that horses kick because they are afraid of what is behind them, and when they kick against it and it hurts them they only kick harder; and this will hurt them still more and make them remember the scrape much longer, and make it still more difficult to per-

suade them to have any confidence in anything dragging behind them ever after. But by this new method you can harness them to a rattling sulky, plow, wagon, or anything else in its worst shape. They may be frightened at first, but cannot kick or do anything to hurt themselves, and will soon find that you do not intend to hurt them, and then they will not care anything more about it. You can then let down the leg and drive along gently without any further trouble. By this new process a bad kicking horse can be learned to go gentle in harness in a few hours' time.

How to Cure Bad Kickers.

For extremely bad kickers or horses bad to shoo, the following method will be found effectual. Put on a common rope or strap halter, with a hitching rope or strap about twice as long as the animal's body. Have round the body a common rope or surcingle. Then pass this rope or strap between the fore-legs over the surcingle, back around the hind feet, below the fetlocks and forward over the surcingle between the legs, and tie short into the halter beneath the jaws. Now make the horse kick and you will find that he reproves himself in the most severe manner, and in a short time will submit unconditionally. Care should be taken against chafing the foot by the action of the strap or rope around the fetlocks. If you can attach a little strap around each foot, with rings in them, through which run strap or rope from the head instead of around the feet, horses extremely bad to kick when handled about the feet, or to be shod, yield readily to this mode of treatment. Always after a horse has submitted he should be treated in a kind and gentle manner. For driving in harness, attach to a common halter head-stall a strap about six feet long, over which put a two inch ring, then tie the end of this strap back into the halter. Now pass this double strap down between the fore-legs, so that the ring will extend just back of the belly band, then buckle round each hind foot below the fetlocks, short straps with rings attached, to these rings attach a rope which is passed through the ring upon the halter, just enough to enable the horse to stand naturally. In this condition it will be seen the horse has sufficient freedom to walk and trot but the moment he attempts to kick, he reproves himself by the attachment to the head.

How to Hitch a Horse to a Sulky.

Lead the horse to and around the sulky; let him look at it, touch it with his nose, and stand by it until he does not care for it; then pull the shafts a little to the left, and stand your horse in front of the off wheel. Let some one stand on the

right side of the horse and hold him by the bit, while you stand on the left side facing the sulky. This will keep him straight. Run your left hand back and let it rest on his hip, and lay hold on the shafts with your right, bringing them up very gently to the left hand, which still remains stationary. Do not let anything but your arm touch his back, and as soon as you have the shafts square over him, let the person on the opposite side take hold of one of them, and lower them very gently to the shaft bearers. Be very slow and deliberate hitching; the longer time you take, the better as a general thing. When you have the shafts placed, shake them slightly, so that he will feel them against each side. As soon as he will bear them without scaring, fasten your braces, etc, and start him along very slowly. Let one man lead the horse to keep him gentle, while the other gradually works with the lines till he can get behind and drive him. After you have driven him in this way a short distance, you can get into the sulky, and all will go right. It is very important to have your horse go gently when you first hitch him. After you have walked him awhile, there is not half so much danger of scaring. Men do very wrong to jump up behind a horse to drive him as soon as they have him hitched. There are too many things for him to comprehend all at once. The shafts, the lines the harness, and the rattling of the sulky, all tend to scare him, and he must be made familiar with them by degrees. If your horse is very wild, I would advise you to put one foot up the first time you drive him.

To Train Horses for the Chaise.

It will not require a very vivid imagination for those that use the chaise much, to know that there is a great difference in the motion of the chaise; and what makes the difference? It is the gait of the horses; and those who would purchase a good chaise horse, must look for a short gaited one. A long gaited horse gives an unpleasant motion to the chaise. Now all horses of good action will make a good chaise horse if you shorten their gait. To do this, you must use a net. This net is like a breast collar; it must be two feet or two and a half and must now be fastened to the collar and harness, and worn long, reaching to the knees; the cords in the fringe to this must be about four inches apart, and on each cord there must be four balls of one inch and a half in diameter.

There must be a similar net on the breaching, reaching round the flank and meeting the front one; this net must hang below the gambrials; then use a string of smaller balls on the fore feet, these to be one inch in diameter. They will effectually shorten the gait. You should be careful in the first exercise after the putting on of the net. Drive or lead the horse around

after the harness and net are on, before putting him to chaise. After a few days' practice, you will have a fine chaise horse. Some of the best chaise horses have become so from having sore feet, which made them step short. If you will attend to the remarks on shoeing, and take care of the foot otherwise, your horses will never have contracted feet.

To Train a Horse to Stand when you are getting into a Carriage.

There are many horses that are very gentle after starting, but that will not stand to let more than one get in; they will then rear up and start very suddenly, and, if stopped, they become stubborn, and refuse to start when called on. People usually punish them with the whip, or by kicking them, sometimes in the belly, which is very dangerous, as they have thus been ruptured. Now, with such a horse as this, you should commence in this way—after he is hitched, caress him about the head, then take hold of the reins, and put your foot on the step, and shake the carriage; if he starts, pull gradually on the reins, and at the same time, speak low, 'Whoa my boy!' or some thing like it. Then approach his head, and give him a piece of apple, caress him on the head, between the eyes, and on the nose and neck; continue this kind of treatment a few minutes, and when you get in don't you allow him to start off in a hurry—walk him off. After a few repetitions of this exercise he will be perfectly submissive.

Halter Pulling

It is a very easy matter to break up this bad habit. Put on the Eureka Bridle, and train the horse about until he will come to you readily when you pull upon him a little sideways. Simply repeat this, gradually a little more on a line with his body at each repetition, until he will yield as readily at being pulled forward as sideways. Then tie a strap, or a piece of rope around the body where the harness saddle rests. Now lead the horse to his manger or to a post, run the halter strap through the ring or hole and pass back between the fore-legs over the strap or cord tied around the body, and tie to the hind leg below the fetlock. If your halter strap is not long enough, splice a piece to it. Your horse so fastened step forward to his head and make him pull. Of course he will go back with a rush, but the moment he attempts going back, the halter strap pulls directly upon the hind leg, which not only disconcerts, but makes it impossible for him to pull. The most halter pullers will not pull two or three times when so hitched but success in this as well as all other cases depends much on the prudence and good judgment used in managing the case.

How to Manage Balky Horses.

Horses know nothing about balking until they are forced into it by bad management. When a horse balks in harness, it is generally from some mismanagement, excitement, confusion, or from not knowing how to pull, but seldom from any unwillingness to perform all that he understands. High-spirited free-going horses are the most subject to balking, and only so because drivers do not properly understand how to manage this kind. A free horse in a team may be so anxious to go, that when he hears the word he will start with a jump, which will not move the load, but give him so severe a jerk on the shoulders that he will fly back and stop the other horse. The teamster will continue his driving without any cessation, and by the time he has the slow horse started again, he will find that the free horse has made another jump, and again flown back. And now he has them badly balked, and so confused, that neither of them knows what is the matter, or how to start the load. Next will come the slashing and cracking of the whip, and hallooing of the driver, till something is broken, or he is through with his course of treatment. But what a mistake the driver commits by whipping his horse for this act! Reason and common sense should teach him that the horse was willing and anxious to go, but did not know how to start the load. And should he whip him for that? If so, he should whip again for not knowing how to talk. A man that wants to act with reason should not fly into a passion, but should always think before he strikes. It takes a steady pressure against the collar to move a load, and you cannot expect him to act with a steady, determined purpose while you are whipping him. There is hardly one balking horse in five hundred that will pull truly from whipping; it is only adding fuel to fire, and will make him more liable to balk another time. You always see horses that have been balked a few times, turn their heads and look back as soon as they are a little frustrated. This is because they have been whipped, and are afraid of what is behind them. This is an invariable rule with balky horses, just as much as it is for them to look around at their sides when they have the bots; in either case they are deserving of the same sympathy, and the same kind of rational treatment.

When your horse balks, or is a little excited, or if he wants to start quickly, or looks around and don't want to go, there is something wrong, and he needs kind treatment immediately. Caress him kindly, and if he don't understand at once what you want him to do, he will not be so much excited as to jump and break things, and do everything wrong through fear. As long as you are calm, and can keep down excitement of the horse, there are ten chances to have him understand you,

where there would not be one under harsh treatment; and then the little flare up would not carry with it any unfavorable recollections, and he would soon forget all about it, and learn to pull true. Almost every wrong act the horse commits is from mismanagement, fear or excitement; one harsh word will so excite a nervous horse as to increase his pulse ten beats in a minute.

Almost any team, when first balked, will start kindly if you let them stand five or ten minutes, as though there was nothing wrong, and then speak to them with a steady voice, and turn them a little to the right or left so as to get them both in motion before they feel the pinch of the load. But if you want to start along a team that you are not driving yourself, that has been balked, fooled, and whipped for some time, go to them and hang the lines on their hames, or fasten them to the wagon, so that they will be perfectly loose; make the driver and spectators, if there are any, stand off some distance to one side, so as not to attract the attention of the horses; unloose their check reins, so that they can get their heads down if they choose; let them stand a few minutes in this condition, until you can see that they are a little composed. While they are standing you should be about their heads gentling them; it will make them a little more kind, and the spectators will think you are doing something that they do not understand, and will not learn the secret. When you have them ready to start, stand before them, and as you seldom have but one balky horse in a team, get as near in front of him as you can, and if he is too fast for the other horse, let his nose come against your breast; this will keep him steady, for he will go slow rather than run on you; turn them gently to the right, with the wagon; have it stand in a favorable position for starting out, letting them pull on the traces as far as the tongue will let them go; stop them with a kind word, gentle them a little, and turn them back to the left, by the same process. You will have them under your control by this time, and as you turn them again to the right, steady them in the collar, and you can take them where you please.

There is a quicker process that will generally start a balky horse, but not so sure. Stand him a little ahead, so that his shoulder will be against the collar, and then take up one of his fore-feet in your hand, and let the driver start them, and he will go right along. If you want to break a horse from balking that has long been in that habit, you ought to set a day apart for that purpose. Put him by the side of some steady horse; have check lines on them; tie up all the traces and straps, so that there will be nothing to excite them; do not rein them up, but let them have their heads loose. Walk them about to

gether as slowly and lazily as possible; stop often and go up to the balky horse and gentle him, but keep him just as quiet as you can. He will soon learn to start off at the word, and stop whenever you tell him.

As soon as he performs right, hitch him to an empty wagon. It would be well to shorten the stay chain behind the steady horse, so that if it is necessary he can take the weight of the wagon the first time you start them. Do not drive but a few rods at first; watch your balky horse closely, and if you see that he is getting excited, stop him before he stops of his own accord, caress him a little, and start again. As soon as they go well, drive them over a small hill a few times, and then over a large one, occasionally adding a little load. This process will make any horse true to pull.

Advice to Those Who Hire Horses.

It will be for your interest, reader, to use all precautions to prevent a horse from becoming sick while in your hands. This can be done by adhering to certain rules which I will now note down.

When you leave the stable drive slow for a few miles unless you know how much the horse has been fed. If he has just finished his meal it is very necessary that he should be driven at a moderate pace on the start. If he had eaten a few hours before, this precaution will be unnecessary. When you water your horse never give over two quarts, and that once in three hours. Look at his mouth—if it is moist with saliva, he does not need watering. If the mouth is dry and if tepid water is at hand, wash out the nostrils and mouth with it, if no tepid water is at hand use cold, but warm water would cause the saliva to exude, relieving the horse by keeping the mouth moist afterwards.

If you are on a journey stop at 11 A. M. and let your horse stand without any food for a half or one whole hour, then give about one gallon of water, and let him stand ten minutes when he may be given three quarts of oats, or five ears of good bright corn, or three pints of shelled corn. Let him stand after eating, two or three hours, if you can; then you may put him on a brisk trot, without any danger of causing disease. I should rather have a horse driven seven miles an hour, treated in this way, than four, if started off directly after eating. By watering after feeding, and then driving off, gases are generated on the stomach, and give colic, or set the botts to work in the membrane of the stomach.

Again, if the horse is warm when you stop, be careful not to stand him in a current of air; he might take a disease in

ten minutes that would carry him off; if in very warm weather, he had better stand in the sun than in a draught of air. If in very cold weather, either stable him or clothe him when you stop, to keep the cold air from closing the pores of the skin. If you are compelled to stop in the wind, always face the wind, then the air blows the way the hair lays. If in the winter in a northern climate, never allow a snow ball to remain in the foot, especially if he has been driven fast and is warm. The coffin muscle is relaxed by heat, and the close proximity of snow would cool off the foot so suddenly that the muscle would contract, and in a few days the hoof would shrink to the contraction and make him lame.

Always be cautious to keep the feet from cold water when the horse is warm, and any sudden contact of cold with hot blood, either in the body or legs, would be dangerous. These precautions should be taken either in riding or driving. If you drive through water when the horse is warm, give exercise enough to keep up the circulation, not to allow the blood to be chilled in the veins. If you adhere to these rules, you will not be likely to have a horse injured by your management.

On Choking as a Means of Subduing a Horse.

Choking is another method of conquering a skittish, stubborn or refractory horse. It is resorted to in cases where the measures before described fail to produce the desired effect. The principles on which the plan of choking are based, are, that you must make a powerful appeal to the intelligence of the animal by physical means before you can subdue him. Now we must know that most animals, in fighting, seize each other by the throat, and that a dog thus held by his antagonist for a few minutes, on being released, is often so thoroughly cowed that no human artifice can induce him to again resume the unequal contest. It is, then, reasonable to suppose that choking will have a similar effect on the horse. When it can be done without injuring the animal, it is an easy mode of subduing him, for by its operation he becomes docile, and will thereafter receive any instruction which he can be made to undertake. Teaching the horse by this means to lie down at our bidding, tends to keep him permanently gentle towards man, for it is a perpetual reminder of his subdued condition.

It requires a deal of practice to tame a horse successfully by choking; also a nice judgment to know when he is choked sufficiently, as there is a bare possibility that he might get more than would be good for him. We advise persons not perfectly

familiar with a horse, to resort rather to the strapping and throwing-down process, unless the animal to be operated upon is so vicious and intractable that he cannot be cured by it,

To Make Horses Perfectly Safe For Family Use.

For a family horse, we should select one with a full, prominent eye, and a broad space between them, full forehead, ears straight and pointed; when in action the ear should be in motion, working back and forth, thus showing that he knows what is transpiring around him. He should have a long, thin neck, and a full trumpet nostril. A horse of these points is not apt to tire on the road, for they indicate good blood.

By giving the animal to understand that we are his friend and protector, he will feel that he is safe and have confidence in us. To assure him of this we must caress him on the head and neck, and talk softly to him; then if you have something he is very fond of—by feeding him with it we gain his sympathy and confidence, and he will remember us and our kindness to him. To us this is most reasonable. So long as he is treated kindly he will be kind and gentle himself to every one handling him. If he should frighten at any new object, by speaking gently, “So ho, my boy!” several times over, it assures him at once that he is safe. When your horses are harnessed to the carriage, and they wish to start before you are ready, do not jerk them, or speak cross, but go to their heads and caress and soothe them, and, when you get in, draw the reins up carefully, and talk kindly to them, and allow them to walk off slowly; in a few days, with such treatment, your horses will be perfectly tractable and gentle. A full blooded horse is as sensitive as a well bred man, and you must not hilloa to him as you might to a hog. This you may not believe, but it is so. You must never use the whip, except when the horse knows what and how to do, and will not do it, or is lazy, and requires the lash to increase the speed. Adhere to the principle of kindness, and you will not fail to have a well trained family horse.

On the Rearing of Colts

If a fine colt is desired we must breed to a fine horse thorough blooded.

The colt should not be allowed to shrink for two years at least.

If the dam has not sufficient milk to keep him plump, he must be fed on cow's milk. Feed him through the winter on oatmeal dry and give him cow's milk to drink. If a colt is

allowed to shrink during the first two years, he will never fill out again as full and plump—his fine points will be undeveloped.

The colt should not be kept close to a stable, but allowed to run in and out at pleasure. He should not be allowed to stand on a plank floor at all. In the spring as soon as the grass is good he should be turned out to pasture.

On the Training of Horses for Trotting.

The horse should be in good flesh. He should be driven moderately, with walking exercise every morning of about five miles. Before going into quarters, give him a brush, for one hundred yards, at the top of his speed, and one or two miles of moderate driving, sufficient to sweat him; then rub dry with rubbing rags, light rubbing is the best, just enough to dry the hair. Hard rubbing on the bones or cords causes soreness. Rub the flesh and muscles well to harden them. When driving to sweat, put on two thick woolen blankets, and drive at full speed two miles. Then turn down the hood, or neck cover, and scrape the head and neck well, and rub dry; then cover dry, and continue the same over the whole body, rubbing lightly and only enough to dry the hair. Then put on nice dry covering, and let him stand. Sweating often in this way will weaken; it should be done but seldom.

Their food and drink should be of the purest kind; sift their oats free from all dust, and dust their hay too. Give about a handful at a feed, morning and noon, and about twice that at night. From twelve to sixteen quarts of oats would be a great plenty per day—twelve would be plenty for the majority. Give one gallon of water in the morning. The same at noon. At night, give two gallons of water, and a peck of oats, with treble the quantity of hay. You should not exercise any horse on a full stomach, for then fast work hinders digestion. Grain, lying undigested in the stomach, generates a gas by fermentation, which sets the bots at work, and gives colic. Indigestion is the cause of many diseases, and can be avoided by adhering to the directions for feeding, watering and driving, given in the first part of this book. If he is bound up, and you wish to physic, give bran mash.

On Horse Blinds, or Blinkers.

All my experience with, and observation of horses, proves clearly to me, that blinkers should never be used, and that the sight of the horse for many reasons, should not be interfered with in any way. Horses are only fearful of objects they do not understand, or are not familiar with, and the eye is one of

the principal mediums by which this understanding and this familiarity are brought about. The horse, on account of his very amiable nature, can be made in the course of time to bear almost anything, in any shape; but there is a quicker process of reaching his intelligence than that of wearing it into him through his skin and bones. However wild or nervous a horse may be, he can be taught in a very short time to understand and not to fear any object, however frightful in appearance. Horses can be broken in less time, and better without blinkers; but horses that have always worn them will notice the sudden change, and must be treated carefully the first drive. After that they will drive better without the blinkers than with. I have proved by my own experiments that a horse broken without blinkers can be driven past any omnibus, cab or carriage, on a parallel line as close as it is possible for him to go, without ever wavering or showing any disposition to dodge. I have not in the last eight or ten years, constantly handling horses, both wild and nervous, ever put blinkers on any of them and in no case have they ever shied at passing objects.

The horse's eye is the life and beauty of the animal, as well as the index of his emotions. It tells the driver in the most impressiv manner, what the horse's feelings are. By it he can tell the first approach of fear in time to meet any difficulty; he can tell if he is happy or sad, hungry or weary. The horse, too, when permitted to see, uses his eyes with great judgement. He sees better than we do. He can measure distances with his eyes better than we can, and if allowed the free use of them, would often save himself, by the quickness of his sight, from collisions when the driver would fail to do so by a timely pull of the reins. It would also save many accidents to pedestrians in the streets, as no horse will run to any person or any person he can see. Blinkers are rapidly going out of use in the United States, and I have yet to find the man who having once left them off, could be persuaded to put them on again. They are an unnecessary and injurious incumbrance to the horse, and in years hence will be a thing to be read of as one of the follies happily reformed in the nineteenth century.

Rules to be Observed in the Purchase of a Horse.

When about to purchase a horse, examine the eyes well. The best judges are sometimes deceived in the eyes, therefore you cannot be too careful. Clearness of the Eyes is a sure indication of there goodness; but this is not all that should be attended to; the eyelids, eyebrows, and all the other parts, must also be considered; for many horses whose eyes appear clear and brilliant, go blind at seven or eight years old. There-

fore be careful to observe whether the parts between the eyelids and the eyebrows are free from bunches, and whether the parts round the under eyelids be full, or swelled; for these are indications that the eyes will not last. When the eyes are remarkably flat, or sunk within their orbits, it is a bad sign; also when they look dead and lifeless. The iris, or circle that surrounds the sight of the eye, should be distinct, and of a pale, variegated, cinnamon color, for this is always a sure sign of a good eye, and it adds beauty to the appearance of the animal.

Next examine the teeth, as you would not wish to purchase an old horse, nor a very young one for service.

The Feet should next be regarded; for a horse with bad feet is like a house with a weak foundation, and will do little service. The feet should be smooth and tough, of a middle size, without wrinkles, and neither too hard and brittle, nor too soft, the Heels should be firm, and not spongy and rotten; the Frogs horny and dry; the Soles somewhat hollow, like the inside of a dish or bowl. Such feet will never disappoint your expectations, and such only should be chosen.

Particular regard should be had to the Shoulders; they should not be too much loaded, for a horse with heavy shoulders can never move well; and on the other hand, one that has very thin shoulders, and a narrow chest, though he may move briskly so long as he is sound, yet he is generally weak, and easily lamed in the shoulders; a medium should therefore be chosen.

The Body, or Carcass, should neither be too small nor too large. The Back should be straight, or have only a moderate sinking below the Withers; for when the back of a horse is low, or higher behind than before, it is both very ugly and a sign of weakness. The back should also be a proper length. The Ribs should be large, the Flanks smooth and full, and the Hind-parts, or uppermost Haunches not higher than the shoulders. When the horse trots before you, observe if his haunches cover his fore-knees. A horse with a short hind-quarter does not look well.

The next thing to be regarded in a horse is his Wind, which may be easily judged of by the motion of his flanks. A broken winded horse also pinches in his flanks, with a very slow motion, and drops them suddenly, which may be easily perceived. Many horses breathe thick that are not broken-winded indeed, any horse will in foggy weather, or if foul fed, without sufficient exercise; but if a horse has been in good-keeping, and had proper exercise, and yet has these symptoms, there is some defect either natural or accidental; such as a narrow chest, or some cold that has affected the lungs.

There are other particulars that should be observed in choosing a horse. If his Head be large and fleshy, and his Neck thick and gross, he will always go heavy on the hand, and therefore such should never be chosen. A horse that has his Heels very wide, seldom moves well, and one that has them too near will chafe and cut his legs by crossing them. Fleshy-legged horses are generally subject to the Grease, and other infirmities of that kind, and therefore should not be chosen.

The Temper of a horse should be particularly attended to. Avoid a fearful horse, which you may know at first sight by his starting, crouching, or creeping, if you approach him. A hot and fretful horse is also to be avoided, but the buyer should be careful to distinguish between a hot, fretful horse and one that is eager and craving. The former begins to fret the moment he is out of the stable, and continues in that humor till he has quite fatigued himself; and the latter only endeavors to be foremost in the field, and is truly valuable; he has those qualities that resemble prudence and courage; the other those of intemperate heat and rashness.

A horse that goes with his fore-feet low is very apt to stumble and there are some that go so near the ground that they stumble most on even roads; and the dealers, to remedy this, put heavy shoes on their feet, for the heavier a horse's shoes are the higher he will lift his feet. Care also should be taken that the horse does not cut one leg with the other. A horse that goes near the ground will cut the low side of the fetlock joint, but one that goes high cuts below the knee which is called the speedy cut. A horse that lifts his feet high generally trots fast, but is not the easiest for the rider. Some horses cut with the spurn of the foot, and some with the heel; but this you may soon perceive by their standing; for if a horse points the front of his foot inward, he cuts with the spurn, and if outward, with the heel.

These few instructions may be of use in purchasing horses; but I advise every one to get some experimental knowledge of them before he trusts to his own judgment, for the dealers have so many arts to hide the defects of their horses, that the best judges are often very much deceived.

How to Tell a Horse's Age By His Teeth.

The only sure way of telling the age of a horse, is by the teeth, and these only for certain time; after which time there is nothing to depend on, although you can guess very near, by the front teeth of his upper jaw, until he is about twelve or thirteen; this, with the face of the horse, and some other marks, enables one experienced in horses to guess pretty correctly.

There are six teeth above, and six below, in the fore part of the horse's mouth, from which we may judge of his age, they are called gatherers. When a colt is foaled, he has no teeth in the front of his mouth. In a few days two come in the upper jaw, and two below. Again, in a few days, four more appear; but the corner teeth do not come for several months—three or four. These twelve teeth remain unchanged in the front of the colt's mouth, until he is two or two and a half years old, when he begins to change them for permanent ones; although the manner in which he has been fed regulates, in a measure, the time of change.

Until he is in his eighth year, you tell his age by the front teeth in the lower jaw—so we will only speak of these. At first he sheds the two middle teeth of the six. These are succeeded by two permanent, or horse teeth, of a deeper color, and stronger—and grooved or fluted from top to bottom, with a black cavity in the centre. He is now about three. In the latter part of the fourth year, the teeth on each side of the teeth in the centre undergoes the same process, and he becomes possessed of four horse teeth in the middle, with their natural black marks in the centre, and one colt's tooth only on each side. He next sheds his corner teeth. When he has their successors his mouth is full. He has the black mark now in all the six teeth, and is five years old.

After a horse is seventeen or eighteen, the grinders wear down, and the nippers prevent the grinders from coming together, so that he cannot masticate his food as well as a six year old horse.

Weights to be Carried in Trotting.

Weights to be carried by every trotting horse starting for a match, purse or stake:

Every horse shall carry one hundred and forty-six pounds; if in harness, the weight of the sulky and harness not to be considered. Pacing horses liable to the same rule.

Race Distances.

A distance of mile heat—best three in five—shall be one hundred yards; for one mile heats eighty yards; and for every additional heat an additional eighty yards.

The time between heats shall be, for one mile twenty, and for every additional mile, five minutes.

To Put Horses in Good Condition.

They need good care and clean feed. Do not use condition powders, or such medicines; they are not needed, and are

humbugs. If your horse is hide-bound, and out of condition, give him a good purge of linseed oil, or castor oil—one pint. Then give bran mashes morning and evening; he will soon regain his appetite, and will be all right. At any time when your horse loses his appetite, check his food, and give a mash. Give as little medicine as possible. By this treatment you will have healthy horses.

To Keep Horses Free From Disease.

The stable must be clean and well ventilated. There is nothing more conducive to good health than pure air and clean food. The ceiling of the stable should be at least ten or twelve feet high, with a ventilating box at the head four inches square, running out at the roof. The loft should be perfectly tight, so that the breath of the horse cannot rise and mix with the hay, which may be injured both in taste and wholesomeness. It is a bad plan to put hay in a rack; the horse breathes on it and makes it less palatable and healthy. Feed from a box in front, and but little at a time; he will neither waste it or otherwise injure it. The ventilation in wall of the stable should be as high up as possible so as not to injure him by drafts of air, from which he should always be kept.

Filthy stables cause weak eyes, and a running at the nose, in many instances. The decomposition of vegetable matter, and the urine, give out stimulating and unhealthy vapors, and a strong smell of hartshorn. How can it but cause inflammation of the eyes or lung, or glanders and farcy? Be careful to have your stables so the urine will run off, but don't raise the planking much higher at the front than at the back, for this will cause a strain of the back sinews, and lameness, and thickening up of the same. It is an unnatural way for man or horse to stand.

The horse stalls should have holes bored in the planking, and they should always be kept open. In summer, the horse should always, if he stands on a dirt floor stand on straw, or litter of some kind; it relieves the feet in stamping.

It is very injurious to keep horses in a dark stable; it is bad for the eyes, and many horses go blind from this cause. You should likewise avoid a glaring light, or straining white walls. Give a mellow light, with clean stabling, clean food, clean litter, and all will be well.

How to Shoe a Horse.

If we examine the horse's foot while in his natural state it will be found almost round, and very elastic at the heel. The

frog, broad, plump, and of a soft yielding character; the commissures, open and well defined, and the sole concave; the outside of the crust, from the heels to the toe, increased from a slight level to an angle of about forty-five degrees. Consequently as the hoof grows, it becomes wider and larger in proportion to the amount of horn secreted, and the narrower and shorter in proportion to the amount of horn cut away from the ground surface. If a shoe were fitted nicely and accurately to the foot, after being dressed down well, it would be found too narrow and short for the same foot after the lapse of a few weeks. Now, if any unyielding shoe of iron is nailed firmly to this naturally enlarged and elastic hoof, it prevents its natural freedom of expansion almost wholly, and does not, as the foot grows down, allow it to become wider at the quarters, in proportion to the quantity of horn grown, as before being shod; and consequently the foot changes, from the continued effect of the restraint, from an almost round, healthy foot, to a contracted and unhealthy condition, as generally seen in horses shod for a few years. The principles which should govern in shoeing, are few and simple, and it is surprising that a matter involving such serious consequences, should be conducted with so little consideration. The object of the shoer should be, in trimming and preparing the hoof for the shoe, to keep the foot natural, and this involves:

First.—The cutting away of any undue accumulation of horn affecting in the least its health and freedom.

Second.—To carry out in the form of the shoe, that of the foot as nearly as possible.

Third.—To fit and fasten the shoe to the foot so as to interfere least with its health and elasticity.

The object in preparing the foot for the shoe should be to remove any undue accumulation of horn, designed to prevent its natural bearing, and the free, healthy action of its parts, and requires the cutting away of about the proportion contact with the ground would have worn off or so much as had grown since being shod last. If the shoes had been on a month, then the proportion of horn secreted in the time is to be removed. If on two months, then the proportion of two months growth. No definite rule can be given, the judgment must be governed by the circumstances of the case. The stronger and more rapid the growth of the foot, the more must be cut away; and the weaker and less horn produced, the less, to the extreme of simply leveling the crust a little the better to conform to the shoe. There is generally a far more rapid growth of horn at the toe, than at either the heels or the quarters; more, therefore, will require to be taken off the toe than off the other parts.

Therefore shorten the toe and lower the heels until you succeed in bringing down the bearing surface of the hoof, upon the shoe, to almost a level with the live horn of the sole. Be careful to make the heel level.

Having lowered the crust to the necessary extent with the buttress or knife, smooth it down level with the rasp. The sole and frog detach the old horny exfoliation as it becomes superabundant. The sole, therefore would not need paring were it not for the restraining effect of the shoe upon the general functions of the foot, which is liable to prevent such detachment of the horn.

When this is the case, the sole should be properly dressed out with an English shave, the end of which is shaped like an iron used at sawmills to mark and measure boards. The buttress is too large and square edged to dress out so concave a surface properly, and unless great care is exercised it will not only penetrate through the sole in some places, but leave others entirely neglected. While a good workman may work well with almost any kind of tool, such have also the facility of adapting tools to the work. A horse's foot is not to be hacked and cut as if only a block of lifeless wood, and if even a lifeless machine, what care would be found necessary to preserve its harmony of action complete. The buttress does not seem to be at all adapted to dressing out the sole, and should not be used for that purpose. While we are obliged to find fault with the carelessness of blacksmiths in this respect, it is with the spirit of kindness, sensible that we are ourselves only dull pupils in the work of reform, and perhaps deserving severe criticism.

We would be particular also in impressing the necessity of not confounding the bars with the substance of the sole, and cutting them down to the common level with the sole. Any man of common sense can see, that the bearing of the bars should be equal to the outside of the crest upon the shoe, and that they offer a decided resistance to the contraction of the heels. The cutting away of the bars, to give the heels an open appearance, is inexcusable, and should never be done.

In a natural, healthy condition, the frog has a line of bearing with the hoof, and by its elastic nature, acts as a safeguard to the delicate machinery of the foot immediately over it, and helps to preserve the foot in its natural state, by keeping the heels spread. It seems to be wisely intended to give life and health to the feet. Permitting the heels to grow down, with the addition of high heeled shoes, raises the frog from its natural position, and causes it to shrink and harden, and bears in consequence an important influence in setting up a diseased action that usually results in contraction of the foot. If the

heels are square and high and the hoof presents rather a long, narrow appearance, and is hollow on the bottom, there is a state of contraction going on and you must not hesitate to dress down thoroughly. Do not hesitate because the foot will appear small; cut away until you are well down to a level with live horn of the sole, and if the foot is weak, use the same prudence in not cutting it away too much. The shoer must always bear in mind that the sole must not rest upon the shoe. The sole, when not clogged with old horn, acts as a spring to the weight of the horse, and if it rests upon the shoe, an inflammation may be caused by the pressure of the coffin bone upon the sensitive laminae, which is liable in consequence to be so bruised as to cause soreness and inflammation. The effect of such bruises are most common at the angle of the inner heel, where the descending heel of the coffin bone, forcibly pressing the soft, sensible sole, upon the horny sole, is apt to rupture one or more of the small blood vessels of the delicate fleshy substance connecting the crust to the coffin bone of the part, causing red spots called corns. Let the foot be so dressed down, and the shoe so approximated, that the bearing will come evenly upon the crust all the way round, without the sole touching the shoe. This requires the crust to be dressed level, and although well down to the live horn of the sole, it should always be left a little higher. The corners between the bars and crust should be well pared out, so that there is no danger of the sole resting upon the shoe.

The Shoe.

The principal object should be to have the shoe so formed as to size, weight, fitting and fastening, as to combine the most advantages of protection, and preserves the natural tread of the foot the best; in weight it should be proportioned to the work or employment of the horse. If the horse walks principally upon the road, his shoes should be rather heavy. The ground surface of the shoe should correspond with the ground surface of the foot in its natural state, or in other words it must have a concave surface corresponding with the concave surface of the foot. The nail holes should be punched coarse, and in the centre of the web. If the hind shoe, four on the side and well forward; if the forward shoe, four on the outside, and two or three well forward in the inside toe, as found necessary to retain the shoe. The manner of fastening the shoe in what really affects the foot; and which require the most especial attention in shoeing.

Interfering Shees.

First find what part of the foot hits the opposite ankle which you can do by wrapping the ankle with a rag nicely, which color with some kind of coloring matter, over where the opposite foot hits, you can then discover by driving where the color adheres and what portion of the crust hits the ankle. Remove this portion and have the shoes well under the foot, but carefully fitted, so as to support the foot safely by the bearing of the bar and heel. The hoof should be pared lower on the outside, to turn the ankle, that the other hoof may pass clear. Yet if the inside sole is not dressed, the rim soon breaks, and the inside is found to be actually lower than the outside. Shoes to prevent interfering, should be light and of narrow web, on the inside, with three nail holes near the toe. They should be straight at the point where they come in contact with the opposite leg. By adhering strictly to this principle of paring the foot, and fitting and fastening of the shoe, you will prevent a recurrence of the difficulty.

Shoes, to prevent over-reaching, should be long, and for the forward feet, heavy, especially at the heels; and for the hind feet, light, with heavy toes. The hoof should be well pared at the toe.

The Foot and its Diseases.

The crust, or wall, is that part which is seen when the foot is placed upon the ground and reaches from the hair to the ground. It is deepest in front, where it is called the toe; shallower at the sides, which are called quarters, and of least depth behind where it is termed the heel, it is placed flat upon the ground, but ascends obliquely backward, and possesses different degrees of obliquity in different feet. In a sound hoof, the proper degree of standing is calculated at forty-five degrees, or the fourth part of a semi-circle. This crust is thicker in front, being about half an inch, and at the quarters and heel is very much thinner. It is also thinner at the inner than the outer quarter, where the most weight is thrown upon. It is under the inner splint bone, on which so much weight rests, and being thinner, it is able to expand more—its elasticity is called more into play, and concussion and injury are avoided.

On account of its thinness and the additional weight which it bears, the inner heel wears away quicker than the outer—a circumstance which should never be forgotten by the smith. His object is to give a plain and level bearing to the whole of the crust.

Thus it will be unnecessary to remove but very little, if any,

from the inner heel, as it has worn away faster than the outside, from the greater weight it bears, which would cause corns and quarter cracks, and even slints, the concussions being so much greater. This may all be avoided by paying a little attention when shoeing.

The Frog.

In the place between the bars, and exactly filling it, is the frog. It is a triangular piece of horn projecting from the sole, almost on a level with the crust, and covering and defending a soft and spongy substance, and called the "sensible frog." It is wide at the heels, and above the shell of the foot, and runs to a point like a wedge. This is to keep the heel apart, and prevent him from slipping. It will adhere to the ice like rubber. There is a cleft, commencing at the back and running nearly two thirds the length of the frog, which is firmly united to the sole, but of a nature entirely different from it, being a soft, spongy substance, and very elastic. It never can be bruised until it has been cut, when it becomes a hard, horny substance and by treading on anything solid in going fast, it springs or presses on the sensible part of the foot, and causes corns. Now, this frog should never be cut or pared in the least; let it look ever so ragged it is then healthy. It sheds every three months; but if the knife is used, it is more or less injured.

The Sole.

This is the inner surface of the foot, and is both concave and elastic, and extends from the crust to the bars and frog. It is not as thick as the crust. Notwithstanding its situation, there is not as much weight thrown on it as there is on the crust; because it was intended to expand, in order to prevent concussion when the weight was thrown upon it. It is thicker at the toe, and where it connects with the crust. The principal weight is thrown upon the toe, by the coffin bone wedging in. It is not brittle, in health, and it is somewhat hollow, which gives spring to it and lessens the shock of striking the ground when in rapid motion; for if the sole was flat, there would be no spring to it, and it would be bruised by sudden contact with the ground. Thus you see that by cutting, the spring of the sole is injured and the sole itself becomes dry and hard, and brittle. But if never touched, it retains the moisture, keeps the foot from shrinking, and keeps it healthy.

The Coffin Bone.

Beneath the lower pastern, and entirely enclosed in the hoof, is the proper bone of the foot—the coffin bone. It fills about

one half of the fore part of the hoof, to which it is fitted. It is light and spongy, and filled with numerous holes, through which pass the blood-vessels of the foot. These are necessarily numerous, considering the important and various secretions there going on; and the circulation could not be kept up if these vessels did not run through the substance of the bone. The holes about the coffin bone carry the blood to the little leaves with which it is covered; those near the lower part go to the sole. As this bone is enclosed in the horny box of the crust, no inconvenienc can arise from an outward pressure; for the bone allows free passage to the blood, and protects it from every obstruction

The fore part of the coffin bone, besides being thus perforated, is curiously roughened, for the attachment of numerous little leaves. On its upper surface is a concavity for the head of the lower pastern. In front is a striking prominence, into which is inserted the extensor tendon of the foot. At the back it is sloped for articulation with the navicular bone; and more underneath is a depression for the reception of the flexor tendon, continued down the leg, passing over the navicular bone, and then inserted into this bone. On either side are projections, called the heels of the coffin bone, and the bottom is hollowed to match the internal part of the sole. The most peculiar part of the coffin bone is the production of numerous little leaves around its front and sides. They are prolongations of the thick and elastic membrane covering the coffin bone, and consist of cartilagenous fleshy plates corresponding with and received between the horny leaves that line the inside of the crust. The horny leaves are secreted from or produced by the fleshy ligaments, and, being five hundred in number, their union with each other is so strong that they are inseparable.

When the animal is at rest, the whole weight is supported by these leaves, and not by the sole. It is the contraction of the coffin muscle that creates so much pain when the horse is foundered. The foot is then feverish, the blood vessels are filled with hot blood, and the foot is very sensitive to the touch of the hammer or any jar upon the crust. The elasticity of the sole prevents the foot from being bruised when in violent action.

Between the coffin bone and horny sole is the sensible sole, which is of a ligamentous or tendonous nature, well supplied with blood vessels and with nervous fibres, so that it is very sensitive. A small stone under the shoe will cause great inflammation, and corns are caused by the same. The smith needs to use great care in setting the shoe.

Contracted Feet.

Sometimes only one foot becomes contracted; this may be caused in a cold climate by leaving a snowball in the bottom of the foot after the horse has been exercised until he is very warm. The coffin muscle is then relaxed by heat, and the snow ball cools it so sudden that it contracts. In a few days the hoof shrinks to the muscle thus contracted, leaving a ridge in the hoof.

In a warm climate, it may be caused by letting a horse stand even a short time, in cool water, after exercising and heating the blood. If you wish to bathe your horse's legs, do it with warm water, always; then you avoid all danger, and leave the limbs soft and pliable.

Also, cutting away too much of the sole of the foot, deprives it of the very substance which holds the moisture and keeps the foot healthy. Cutting the frog makes it hard and horny, and when struck hard upon a stone it is pressed to the quick, causing fever. Both practices will cause contraction.

CURE.—When first discovered, bathe the legs from the knee down, in hot water; do this twice a day for two weeks, every night stuffing the feet with clay. His shoes should merely rest on the rim of the foot. Never use a shoe with a swelled heel. When caused by cutting, stuff the feet with clay and use the concave shoes. Never use ointments or grease of any description upon the outside of the hoof, as they close the pores and create fever, without removing the cause of the disease.

Thrush.

This is a very disagreeable discharge of offensive matter from the cleft of the frog, by which pus is secreted together with, or instead of horn. If the frog is sound, the cleft sinks but a little way into it; but by contraction or other causes, the cleft will penetrate to the sensible sole within. Through this fissure the discharge proceeds. It may be caused by bruises or filth. The sinking in at the quarters will cause the horn to press upon the frog, or cutting the frog will cause it to become hard and horny. It can readily be distinguished from any other disease by the offensive smell; run a stick or blade in the fissure, and the discharge will assure you.

CURE.—First poultice with linseed meal, put on hot, and let it remain twelve hours; then use a paste made of two ounces of blue vitriol, one ounce white vitriol, powdered as finely as possible, mix well with one pound of tar and two pound of lard. Apply this in the cleft. It may be put on tow and pushed in. Let it remain twelve hours; and then cleanse out with soft wat

er and soap. When dry, make the second application; also renew the poultices at night, until all inflammation disappears.

If you wish to dry it up quick (which I do not approve), you can use the spirits of salt, ten or fifteen drops at a time. (2.) Cleanse the foot out well, then crowd in fine salt and wash with beef brine. But in all cases of thrush, first use poultices, to relieve the inflammation. A carrot poultice is good, if linseed is not convenient. After this, stuff the foot with clay, in dry weather; this will keep it cool and moist, and it will also make it less liable to be bruised. The horse should take physic during the time, to cleanse the blood. Use Barbadoes aloes, pulverized, and mixed with linseed oil sufficient to make into balls. Dose one ounce.

Grease.

In many cases swelled leg, although distinct from grease, degenerate into it. This disease is inflammation of the skin of the heel, and very seldom comes on the fore legs. The skin of the heel has a peculiar greasy feeling, and when inflamed, the secretion of this greasy matter is stopped. The heels become red, dry and scurvy, and being so much in motion, they very soon crack, and sometimes ulceration and fungus will extend over the whole heel. The first appearance of grease is usually a dry scurvy state of the skin of the heel. They should be washed with soap and water, and relieved of all the hard substance that they can by soaking; then wipe dry, and sprinkle pulverized verdigris; this will dry up. But when the heels are badly cracked, and ulceration has commenced, it will be necessary to poultice them with linseed oil, or, if not at hand, carrots boiled soft and mashed fine; this is a good poultice for any inflamed part.

When inflammation and pain have gone, and there is a healthy discharge of matter, dress with an ointment of one ounce of rosin, two ounces of rosin, two ounces of honey in the comb, two ounces of lard, and one ounce of caliman powder; this cools and heals very fast. If the fungus is not entirely gone, wash with two drachms of blue vitriol in a pint of water. It is well to give a mild diuretic every third day—one tablespoonful of pulverized rosin in a ball of bran mash. Mash the horse while treating for this. Sassafras tea is good for him. If the legs swell after they are healed, bandage every night, and give moderate walking exercise. Give a slight purge of linseed oil or Barbadoes aloes.

Another Cure or Remedy is:—Two ounces Flour Sulphur, one-half ounce Verdigris. Mix and apply after washing.

Cure for the Grease from Internal Causes.—If the horse be full of flesh, the cure must be begun by bleeding, rowels, and repeated purging; after which two ounces of the following balls should be given every other day for some time, and they will work by urine the day following; 4 oz. of Yellow Resin, 2 oz. of Salt of Prunel, 1 oz. of Oil of Juniper, 2 oz. of Salt of Tartar, 8 oz. of Castile Soap, 1 oz. of Camphor. Put these into a mortar with about two ounces of honey, or as much as will make them into balls, and they will carry off the offending humors, and free the blood from its noxious qualities. But at the same time that these internal remedies are taken, outward ones should not be omitted.

Cure For Grape Legs.

These may be cured on their first appearance, when they are in the bud, by laying on caustic, or corrosive sublimate. When the swelling is abated, make the following into a salve to dress the sores with: 1 oz. of Blue Stone Vitriol, in powder 2 oz. of White Lead, in powder, 4 oz. of Honey. Mix these well together, and lay them on the sores with tow, to heal them; but, should they continue foul, and not frame to heal, mix four ounces of green salve and four ounces of *Ægyptiacum* ointment well together, and lay it on in the above manner. The mixtures will both heal and dry up the sores.

Founders, How Caused, Etc.

The Chest Founder is produced by violent exercise on a full stomach, and drinking large quantities of cold branch water; by the use of mouldy bran, corn, or oats, or by eating large quantities of green food, such as oats, wheat, peas, etc., while performing hard labor. The seat of the disease is in the lungs; the heart and liver are also considerably enlarged, inasmuch that there is not room, for them to perform their office with ease. The liver, lungs, diaphragm, and surrounding parts, are all covered with large brown spots, and are much inflamed.

There are many that hold that a horse can be foundered with grain. This is not so. The argument given is that they have driven horses or have known cases where the horse was driven under a shed and fed without watering. This may be so; but that is no argument; for a horse may be driven and stand where there is a cold blast of wind that would chill a horse as bad as water. This would create founder as well as water; anything cold would create contraction; where, on the contrary, grain would create heat, instead of cold, and heat would relax; so that argument is worth naught. I will not pretend to say but that grain would injure a horse when hot. You might give corn meal, and it would bake in the maw, and

there would be no passage; this would kill, but not founder. You are well aware that to heat a tire, then place it over the felly, it is perfectly loose, but when you put on cold water, it contracts to the felly and strengthens the wheel. So you will see at once that it is cold that causes founder. Cold contracts and heat relaxes, and grain would create heat.

CURE.—When the horse is foundered, take one and a half or two gallons of blood from the neck vein; then give, as a physic six drachms of Barbadoes aloes, dissolved or in balls. Cover the horse over; then commence bathing with as hot water as you can use. Keep this up for an hour at least. Then stretch an old pantaloon leg over each of his fore legs, bind it around the hoof, then fill in with hot boiled oats; give as a drink sassafras tea, made from the root, and give bran mash, with a table-spoonful of pulverized rosin. He should have a mash once a day for three or four days. This will cure him.

But in case of founders of long standing, or even if the hoof has shrunk to the contraction of the muscle, it will be necessary to treat it somewhat differently. The bleeding should be omitted, the legs bathed twice a day, and the feet should be poulticed with flaxseed meal three times a week, at night, or in day time if he is not at work. If he could run out to a marshy pasture, it would not be necessary to poultice. But he must have something to act on the blood. Take of digitails four drachms, emetic tartar four drachms, nitre six drachms; divide this into two doses, and give one in three days. Between the days that this is given, give bran mash mixed with sassafras tea. This physic may be given once in every three weeks, with the feet always to be kept moist. It will take three months to effect a cure. When of long standing, the muscles of the shoulder sometimes contract, as in sweeney. In this case a seaton of from nine to fifteen inches must be used, according to the contraction.

The Navicular Bone.

This is placed at the head of the coffin bone, and at the foot of the lower pastern, and is shaped like a wedge. Its office is to protect the coffin-joint at the back part. The frog getting dry and feverish, would allow the ligaments to be bruised, and cause lameness—another reason why the foot needs great care.

Quarter Crack.

For this, pare with a sharp knife from the hair down, taking away the whole back part of the hoof down to the quick; then pare the other down thin; then set your shoe only so far

as the hoof runs. By this means the shoe cannot spring down upon the heel. The hoof will then grow down firm and sound.

Heaves—Reasons why It is Not in the Lungs.

First.—If the disease was in the lungs, it would create inflammation, and have the same effect as inflammation of the lungs by cold. The horse would be weak and drooping without appetite, and, really, could not be driven two miles as any person would drive a horse. But a heavy horse can be driven from eight to twelve miles within an hour. This is positive proof that it is not in the lungs.

Second.—Take a heavy horse and turn him out to pasture forty-eight hours, and he will breathe clear and easy, showing no signs of the heaves. The grass has not reached the lungs, still it has stopped the hard breathing; but if you will give the horse cold water to drink, he will cough. Has the water touched the lungs? No; but it has touched the disease. This is another reason why it is not in the lungs.

I will tell you where the disease is, and what it is caused by. 1st. A dainty horse is not liable to heaves; but a hearty eater is liable to this disease—not from the amount of food that he eats, but from the hoggish way of eating. There are two pipes leading to the stomach and lungs; where they meet there is a throttle valve. A horse on eating coarse food, scratches his throttle; then, by a hard drive, and warming the horse, he takes cold in his wound, and becomes a running sore or canker. By turning the horse to grass, the juice cleanses and washes the wound; the grass being cool takes the inflammation from the disease; the swelling is gone, and the horse breathes free and easy as ever. This is positive proof that it is not in the lungs. Then, by feeding with coarse and dry hay, it irritates and creates inflammation and causes the horse to breathe hard again.

CURE.—Take Balsam of Fir and Balsam of Copavia, equal parts; add enough calcined magnesia to make into balls. Give a middle-sized ball, night and morning, for ten days or two weeks—a ball about the size of the yolk of an egg. This is a sure cure. I never made a failure in any case. You should be careful about feeding for two weeks, after giving the medicine. Cut, feed, and wet the hay. A little brown sugar in his food for a few days will be good.

Lung Fever.

This disease always makes its appearance by a chill, the horse will shake and tremble like a person with the ague.

Whilst the chill is on, take half a pint of fine salt, put in a bottle of water, shake well, and drench the horse. This will release him entirely from the chill, and create perspiration, and he will be quite sick for a few minutes; but it will drive the cold entirely out, and he will look bright, and feel entirely well in a few hours. But if you should not discover him while the chill is on, it will require different treatment. If he has been free from the chill for five or six hours, the symptoms will be, eyes inflamed, nostrils distended, breath short and quick, and he will stand with his head down; his pulse from fifty to one hundred. You will find it under the jaw, just below where they buckle the throat latch. By putting your ear back of the fore leg you will hear a quick, heavy beating of the lungs. He will have no disposition to move or eat, but will drink; he never lies down. These are sure signs of inflammation of the lungs.

The causes of inflammation of the lungs are many. It may be brought on by filthy stables, but is usually by sudden changes from heat to cold and vice versa. The membrane that lines the cells of the lungs is very sensitive; there is also an intimate connection between the lungs and the pores of the skin; by stopping the insensible perspiration, a cold and cough ensue. A horse is driven until a sensible perspiration is pouring from him, then he is left in a current of air which closes the pores of the skin, thus arresting the perspiration, and driving the inflammation which it causes to the lungs. The majority of cases are very sudden. At first, the pulse is not much quicker, but the artery is plainly to be felt under the finger, and of its usual size. The pulse no longer indicates the expansion of the vessel; in some cases it eludes a most delicate touch; the legs are cold and the nostrils expanded; the flanks begin to heave with a quick and hurried motion, a symptom of pain; the membrane of the nose is very red; he stands with his legs abroad; his countenance indicates suffering, and he looks mournfully towards his flanks—he is unwilling to move—scarcely ever lies down; if he does, it is only for a moment from actual fatigue.

The duration of this disease is very uncertain. It will in some cases destroy in from twelve to twenty hours, and sometimes they will last for weeks. In sudden attacks of this kind, the lungs are entirely destroyed, resembling one black mass of blood.

The disease invariably makes its appearance with a chill. He commences trembling and shaking as if half frozen. At this stage of disease, the object should be to get up a reaction. Dissolve half a pint of fine salt, in warm water; shake it well,

and give as a drench; then clothe him, and in fifteen minutes he will be wet with perspiration; bathe his legs in warm water.

But if the fever has commenced, it will require different treatment; if it has been on, say six hours, it will be necessary to bleed, and very severely so. Open as large an orifice in the vein as possible; the object is to get control of the blood. The heart is working very hard to force the blood through the lungs. Bleed until the pulse is much slower, or flutters; then bathe the leg with as hot water as he can bear; bathe frequently, to get up circulation in the extremities.

If the attack is a severe one, blister the brisket, and the sides, as high up as the elbows—a mustard blister, if it will do; if not, with the flyblister—four oz. lard, one oz. rosin, and one oz. flies. It will not do to purge; there is so much sympathy between the bowels and the lungs, purging would transfer the inflammation to the bowels. In such a case, you must use clysters. Take eight oz. Epsom salts, dissolve in warm gruel, and inject; this will start the bowels, which are somewhat relaxed. You must now use cooling or sedative medicines. Take of digitails one drachm, one and a half of emetic tartar, and three of nitre; give three times a day; this will have an immediate effect on the heart, lessening the number of pulsations, and producing an intermittent state of the pulse; every six or seven beats, there will be a suspension while two or three could be counted. From this he will amend. Now reduce the dose to one half, and in a few days, it will not be necessary to give any medicinal treatment of any kind.

He should now have oatmeal gruel, or flaxseed meal gruel, they are strengthening. Mashies may be given, or green food, in small quantities. For inhaling, which is one of the most essential things to be done, use—digitails one half ounce, nitre one ounce, and of balsams, fir and copaiva, two ounces each. Mix these together with one pint 95 spirits, and add one pint hot rain water. Cover the horse all over, letting the blankets reach the ground, so that no air can get under them. Then hold the mixture under his nose, and at the same time, touch a hot iron in the compound, and let him inhale the steam or fumes arising from the mixture. This will relieve the lungs from fever, drive the inflammation to the surface, and the cure is positive.

Adhesive Plasters.

These plasters should be used over parts that have been strained, or otherwise weakened, and on deep-seated inflammation of the loins or back sinews. They are always to be ap-

plied warm, when they will adhere for a long time. The following is a good plaster:

Take of Burgundy or common pitch five ounces, of yellow wax one ounce, of tar six ounces. Melt together. When cooled to blood heat, add half a drachm of pulverized cantharides. Stir well together.

When you apply it, warm or melt it over, and rub it well into the hair upon the sprain; then, while it is yet warm, (for it should be applied as hot as possible,) spread over it a lint of tow, well picked; pat down with the hand. This will make a strong covering, and will remain for months. It will gradually remove deep-seated inflammation, and, by its pressure, promotes the absorption of any callous or thickening beneath; at the same time, as a bandage, it gives strength to the parts.

Physicing.

There is more injury done in the practice of this than in any other medical treatment of the horse. The old practice has been to physic and bleed every spring, and this is necessary where the horse is really sick. When you change him from the pasture to the warm stable and dry food, it is also good, the horse must be prepared for it. Give three or four mashers before the physic, and, in the majority of cases, they will be sufficient without it, especially if the bowels are slightly moved for really the less medicine given the better.

After the physic is given, the horse should have walking exercise for an hour or two; but, when it begins to operate, he should be kept still as possible, or the medicine would be likely to gripe, and perhaps irritate the intestinal canal, and cause inflammation. You can give him a small amount of hay and as much mash as he will eat, and as much water with the chill off as he chooses to drink; if he will not drink tepid water, give him about a quart of cold water every hour. When the purging ceases, give a mash twice a day, until you give more physic, which should be only once a week.

Barbadoes aloes is the best purgative, being always sure and safe. The dose, with the horse prepared by bran mashers, would vary from five to seven drachms, the latter sufficient for any horse. You can dissolve in warm water, and give as a drench, or make into a ball with linseed oil, and lay upon the roots of the tongue, letting go the tongue at the same time.

The next best purgative is the Croton nut; the fatina or meal of the nut is used. It should be made into a ball with linseed oil. Give from a scruple to half a drachm, according to the state of the subject. It acts more speedily than aloes, but causes more debility. Linseed oil is uncertain, but safe

in doses from a pound to a pound and a half. It leaves the horse in very good condition.

Poultices

Few horsemen are aware of the value of these simple preparations in abating inflammation and in allaying pain, cleansing wounds and causing them to heal. They are the best kinds of fomentations; they continue longer and keep the pores open. In all inflammations of the foot they are very beneficial and in cases of contraction. A poultice that retains the heat and moisture longest is the best. They will relieve swellings, take out the soreness from the pores, and draw out the unnatural substances. Linseed meal makes the best poultice; it will hasten any tumor that is necessary to open, and cleanse any old one, causing a healthy discharge, where it is offensive. But in this case—where the ulcer smells badly—add two ounces of pulverized charcoal or chloride of lime—half an ounce to one pound of meal. This is good to use in grease or cracked heel.

A poultice should never be put on tight. Carrots are very good, mashed fine, after boiling soft. The coal may be used in this also, where the parts smell offensively.

Wind Galls.

These appear oftener on the hind than on the fore legs. It is a filling in of a mucous fluid in bags or sacks. It is caused by undue pressure from violent action, and by straining the tendon. These bags inflame, and fill larger and harder; they always form about the joint, as so many tendons concentrate there. Very few horses are perfectly free from them. At first they may cause lameness; but, in the majority of cases, they do not. It has been thought that these bags were filled with wind, and, in some cases, they have been opened, but this causes inflammation, and would lame the horse. The way to treat them is with a powerful blister directly on them, and then bandage; after the blister is formed, you must bathe it in some astringent. A decoction of oak bark is good. By this treatment the mucous is taken up by the absorbents, and you will have a cure. You must be very careful in driving for several days.

The Action of the Kidneys on the Blood.

The blood contains a great quantity of watery fluid, unnecessary for the nutriment or repair of the frame. There also mingles with it matter which would become noxious if allowed

to accumulate too much. The kidneys are actually employed in separating these fluids, and in carrying off a substance, which, as an ingredient in the urine, is called the urea, and consists of what would be poisonous to the animal if remaining. The kidneys are two large glandular bodies placed under the loins, very much the shape of a kidney bean. The right kidney is forward under the liver; the left is back by the stomach and spleen. A large artery runs to each, and carries about one-sixth part of the whole blood that circulates through the frame. It divides into numberless little branches, most complicated, and coiled upon each other. The blood has waste parts, which, if allowed to remain, would be very injurious; and these must be separated from it.

The fluid separated varies materially in quantity and composition even during health, more so in the horse than in any other animal; and there is no organ so much under our control as the kidneys.

Diuretics are the most useful medicines, and, at the same time, the most injurious if improperly used.

In fevers, and in inflammation generally, for diuretic, use nitre and digitails, on account of their sedative effects. They stimulate the kidneys to separate more than usual the quantity of water from the blood, and lessen the quantity of the latter. The object in this is to reduce the circulation, and thus ease the heart in its labor by calming the excitement. An overflow of blood gives quicker action to the heart, and causes the heating you will notice in lung fever. Diuretics lessen the blood, and give more perfect control over the heart.

In cases where the legs are swelled, the absorbents set to work and take up, and pour into the circulation, the fluid which has been effused into them.

The legs of some horses cannot be rendered fine, nor kept so, without the use of diuretics; nor can what is called grease heel—frequently connected with these swellings, yet cured without the use of them, always let the horse have plenty of tepid water—the more the better. You must always be careful not to keep him too warm; for if he sweats the medicine, instead of stimulating the kidneys, passes off in perspiration.

Antimony.

There are several valuable preparations of this. The black sulphuret of antimony, a compound of sulphur and antimony is a good alternative. It is given with more sulphur, and with nitre, in varying doses, according to the disease, and the slow and rapid effect to be produced. The dose if you expect to continue it, should be at the most, four drachms. It should

never be bought in powder, whatever may be the trouble to pulverize it, for it is frequently adulterated with lead, magnesia, forgedust, and arsenic.

Sweeny.

The disease is on the side of the shoulder. The horse suffering from it will be quite lame, and will stand with one foot before the other; or if it is both shoulders, he will change from one to the other. The use of the shoulder is sluggish, and in breaking he will drag the foot, instead of raising it from the ground. It is caused by a strain or bruise, or by favoring the foot when diseased in some other part.

The membrane or muscle of the shoulder will shrink much. Where the horse has not been lame long enough to know how to ease himself by standing, you can easily tell what the trouble is by pressing with the thumb upon the muscle, which may be shrunk but a little, yet when you press the point affected, he will shrink from the touch.

CURE.—The only way this can be cured is by a seaton or rowell. The object of this is to create inflammation of the membrane. This seaton in these diseases should be from five to fifteen inches in length. The best article to use for it is tarred rigging rope; this should be turned every day for from two to three weeks. To insert this you must make an incision on the top through the skin and the membrane under the skin; the same at the bottom. Procure along, thin iron needle with a large eye, and thread with strong twine, to which fasten the rowell; run the needle through the two openings, drawing the rowell through, and then tie, leaving either inches slack to tie with. In some cases it will be necessary to wet the rowell with oil of turpentine or tincture of cantharides—either will do. Bathe the shoulder every day with as warm water as he can bear.

If it has the desired effect, it will discharge freely. This will relax and loosen up the membrane, and make the parts fill out smooth. Keep clean by soft water and soap, so that the discharge will not remove the hair. If you apply grease on the hair under the cut, it will prevent the hair from coming off.

Hide Bound.

This is not so much a shrinking of the fatty substance between the skin and the muscles, as it is an alteration of the skin itself. It is a drying up of the oily moisture of the skin; it thus becomes dry and hard, the scales to the cuticle no longer yields to the skin, but separating in every direction,

turns the hair and gives it a staring rough look, which is an indication that the horse is out of condition. The vessels of the skin and bowels, as well as the stomach are deranged. It is a symptom of disease of the digestive organs.

At first, give a bran mash, and, if it can be had, sassafras tea. But in severe cases use levigated antimony two drachms nitre three drachms, sulphur five drachms—give every night in a mash. The antimony acts on the skin, the sulphur on the bowels, and the nitre on the urinary organs. Rub him and give him warm clothing. The skin will soon become loose and the horse be in condition again.

Cough.

Use elecompaine roots, horehound and smartweed with six red pepper pods to two ounces of ginger root; boil till all the strength is extracted, then strain through flannel; add two quarts of molasses to every gallon of this extract, and boil all together for half an hour. Give one gill twice a day. Use an ox horn, or a crooked tin horn: Raise the head, and draw the tongue out on the left side; put the small end of the horn on the roots of the tongue, and empty the contents; then let go the tongue, Swab the throat every night with this mixture, using a whalebone with linen wrapped on the end. This is a sure cure for coughs.

Among all diseases to which this noble creature is subject, none has given more perplexity to farriers than a settled cough; indeed, it too often defies all the attempts of art, and the horse frequently becomes asthmatical or broken winded.

For Restoring Hair to Galled Spots on Horses.

Take one pound red clover blossoms and six quarts of water, simmer to a thick syrup—then add sufficient barbery tallow to make a paste. This form is the best ointment for this purpose extant.

For Spavin.

Five ounces euphorbium; 2 ounces Spanish flies, (fine;) one ounce iodine, dissolve with alcohol; one half ounce red precipitate; one ounce corrosive sublimate; one half ounce quicksilver; six ounces hog's lard; six ounces white turpentine, one quarter pound verdigris. Melt the lard and the turpentine together, then while hot add all together. Mix well; when cold, fit for use. Rub it in thoroughly on the spavin every day for three days, then wash clean with soap-suds, omit for three days, and then repeat for three days again, and so on until a perfect cure is produced. Should it blister, use it more cautiously.

Preparation for Blood Spavin.

One half pound blood-root, one quart alcohol, two ounces of tannin and a quarter of a pound of alum.--Mix and let it stand, shaking it several times a day, till the strength is all in the alcohol, and bathe the spavin twice a day, rubbing it in with the hand.

Cure for Heaves.

Take smart weed, steep it in boiling water till the strength is all out; give one quart every day mixed with bran or shorts for eight or ten days. Give green or cut up feed, wet with water during the operation, and it will cure.

Anti-Spasmodics.

There are but few of these, and the horse is subject but to few spasmodic diseases. Opium is the best for general effect and that exerted particularly on lock jaw the oil of turpentine as a specific for spasms of the bowels.

Anti-Spasmodic Tincture for Man or Horse.

Oil cajeput, one ounce; oil cloves, one ounce; oil peppermint, one ounce; oil anise, one ounce; alcohol one quart. Mix all together and bottle for use. Dose for a horse, one ounce every fifteen minutes in a little whisky and hot water, sweeten with molasses; continue until relieved. Dose for a man, one teaspoonful.

Worms in the Horse—How Treated.

There are several kinds of worms in the intestines, and they are hurtful only when in large quantities. The long white worm resembles the common earth worm, and is from six to ten inches long. They are in the small intestines, and, when in large numbers, consume much of the nutritive part of the food, or the mucous of the bowels. Then the smaller and darker colored worm, called the needle worm, in the large intestines. In many cases they descend into the rectum in large quantities; they irritate the fundament and annoy the horse. This is the trouble when he rubs his tail very much.

The horse shows this disease by falling off in flesh; his hide will be tight and the hair looks bad and sets forward; the eye has a dull look and at times will seringe and shrink down; he sometimes passes worms and he cannot be kept in condition.

CURE.—One ounce of aloes dissolved in warm water and given as an injection. This will succeed in most of cases. If

not give one pint of neatsfoot oil as a drench, and one pint as an injection. These will not fail. Give mashes after this for a few days.

It is well known that horses which have many worms can never thrive or carry much flesh. If the breeding of these vermin were prevented, it would add much to the strength of the horse; and it might be done by giving him a decoction of bitter herbs, such as wormwood in Spring. It may be boiled or steeped in hot water, and given two or three times a week. Or a decoction of wormwood buck-bean, gentian root, and camomile flowers, of each a large handful, boiled in a sufficient quantity of water, and given will answer the end.

[Anodynes.

Of these there is but one in horse practice. Opium is the only drug that will lull pain. It also acts as an astringent in doses of one, two or three drachms.

Farcy—Its Treatment.

When the farcy attacks only one part of the horse, and that where the blood-vessels are small, it may be easily cured; but when the plate vein is affected and turns corded, and especially the crural veins inside the thigh are in that condition, the cure is very difficult, and the creature is rarely fit for anything but the lowest work after it.

Bathe the legs every night in hot water, into which put a shovel of hot wood ashes making a weak lay. When he regains his appetite be very careful in feeding. Give him mashes at least twice a day until he gets his strength; then give green food if possible.

In very severe cases of farcy, internal medicines will be necessary. Use of corrosive sublimate, ten grains—increased to a scruple with two drachms of gentian, and one of ginger; repeat morning and night, until the ulcers disappear.

Pleurisy, How to be Treated.

This is an attach of the membrane covering the lungs, and the lining of the chest, called the "pleura." The symptoms are nearly the same as in inflammation of the lungs. The horse has no disposition to lie down or to move about; the neck will be the same as in lung fever; nostrils distended, and the membrane of the nose very red; he breathes very hard, with a kind of grunt; the legs will be cold, and he will have a hard full pulse. The blood, however, is not obstructed in its passage through the lungs. By pressing on his side, he will give symptoms of pain in a very decided grunt.

THE HORSE.

CURE.—Blister both sides of the chest, and bathe the legs in hot water. Or broil bran, and then put an old pantaloons leg on over his, and fill in around with hot bran; this will get up a circulation in the extremities. Then give one and a half drachms emetic tartar, two drachms digitails, three drachms nitre. Keep well covered with warm clothing. Use one ounce of cream tartar in two quarts of tepid water, for a drink. Be sure to keep the legs warm by hot applications and bandages. Use these medicines until a cure is effected.

Staggers.

There is but little of this disease in the Northern States, but it exists to a great extent in all the Southern. The food is the principal cause; there is a great quantity of diseased corn used and too much of any kind is usually given; then as much water as he will drink after it, which generates an unhealthy gas in the stomach, and causes distention; the blood is inflamed and rushes to the head, and the brain is somewhat inflamed. The horse staggers about, or becomes sluggish, and stands with head down; the eyes look glassy; in some cases, he will rear, and fall back, or run; he will not eat, but hold the hay in his mouth, and then drops it; he sweats profusely, and in a short time will fall and die.

CURE.—First, physic with one ounce of aloes dissolved in warm water, and given as drench; in one hour, give half an ounce more of the aloes, and continue this until it operates. As soon as the first aloes is given blister the head with a strong fly blister apply this over the brain, from below the ear nearly down to the eye; then bathe the legs with as hot water as you can use, and bandage them with flannel, keep them as warm as possible. Then give one drachm of digitails, one and a half of emetic tartar, and three drachms of nitre. If it is to be repeated, use half of the above amount in three hours. Then if he has any disposition to eat, give bran mash, with one table spoon full of pulverized resin; use this for a week as he recovers, and feed and work lightly until he regains his strength. If he is bound up, it may be necessary to use injections, which are always beneficial.

Warbles, Sitfasts and Saddle Galls.

These are caused in many cases by using a blanket under the saddle in hot weather, thus scalding the back, and causing these little lumps to appear; and when they ulcerate, they are called "sitfasts." The ulcer has a calloused spot in the center. When they first make their appearance, rest will remove them; but if the horse is to be used, you must remove the stuffing

from the pad of the saddle, that the bearing may not come on the ulcer. Bathe in strong salt water, to remove the enlargement; but if it does not effect this, and it is really a sitfast, apply a blister, this will dissolve it, then apply the resin and honey ointment to heal it. A horse with high withers, long back, and broad loins, will make the best saddle nag, and carry his rider with ease. In hot weather, it is a good practice to bathe the back with salt water, when the saddle is removed at noon and night.

For Inflammation of the Lungs in a Horse.

First a thorough bleeding, then would give tincture veratrum viride, half an ounce; laudanum, four ounces; tincture aconite, quarter of an ounce; shake well together and give a half tablespoonful every three or four hours, in some water, well sweetened; and should it not bring down the pulse, the dose can be gradually increased to a tablespoonful, and as soon as the horse recovers so as to eat and lie down naturally, would keep him on hay alone perhaps, with a few carrots or potatoes, and daily give a bran mash with saltpetre, crude antimony and sulphur for ten or fifteen days, and you will prevent dropsy of the chest, which is a sequel of that disease.

For Colic in Horses.

Salphur ether, one pint; aromatic spirits ammonia, one pint; sweet spirits nitre, two pints; opium quarter of pound; asafoetida (pure), half pound; camphor, half pound; put in a large bottle, let stand fourteen days with frequent shaking and it will be fit for use. Dose two ounces every two, three, or four hours until the horse is relieved. Should be given in water well sweetened.

ANOTHER REMEDY.—One ounce laudanum; one ounce sweet spirits of nitre; one ounce tincture asafoetida, one tablespoonful capsicum; from two to three ounces carbonate soda; half pint whisky; half pint water. Mix and give at one dose, and if not better in twenty-five minutes, repeat half doses.

Stoppage of Water.

This disease in most cases is caused by allowing the horse to become foul, and what is called a beam thereby forms in the end of the penis. The horse will stand and weave or stretch out; then paw and kick his belly with his hind legs; he may drop down in harness, and sometimes break out in a profuse sweat. The only thing to be done in this case is to draw his yard carefully, and run the finger around the head, where you

will find two or three hard substances; withdraw them and wash the sheath clean and grease it with lard.

In some cases it originates from contraction of the muscle of the loins or inaction of the kidneys. To cure this, bathe the loins with hot water for half an hour; then bathe with hot vinegar and pepper-sauce; then cover the loins with three or four thicknesses of blankets. Then mix of turpentine one ounce, sweet spirits of nitre two ounces, and give as a drink. Give a bran mash with one tablespoonful of resin in it every day for a week and the cure is complete.

Colic or Cholera in Mules.

This appears to be a prevalent disease on the plantations, and is brought on by giving too much food and water at one time, and then immediately putting him to work. The hard work retards digestion, and a gas is generated from the food and water, which fills the stomach and bowels and also sets the bots to work. The gas would kill the bot, and to save himself, he bores into the membrane of the stomach, or tries to get out at the meat-pipe or by the passage between the stomachs. They will thus stop up the passage, sometimes, and kill the animal. But if the passages are open, the gas will pass into the bowels, and then the disease is colic. He will be much swollen and distended, breathe short and hard, and will fall or lay down and get up; ears will lop over on each side, and eyes look dull and heavy. When the mule is first taken, take him out to of the stable and keep him as still as possible, and in the majority of cases he will recover without the use of medicine.

CURE.—If he does not thus get over it, take one ounce laudanum; one ounce ether, two tablespoonfuls soda, two drachms of peppermint; put with half pint hot gin, and give as a drench. Then give injection of one ounce of aloes dissolved in warm water. This is an effectual cure.

Colts Brought up by Hand.

It is a frequent remark, that cosset colts, are worse to break than those which were never handled up to two or three years old. The reason is that they are spoiled by petting them, and allowing them to do as they please. When playing with colts, you should always make them do as you wish, and then, if they are learned to do as you will in playing, they will not become stubborn when you wish them to work. The great object in laying the horse down is to make him understand that we can do as we please with him, and then he sees there is no use resenting, and we have gained our point. After this, he

obeys without difficulty, and that stubborn, willful feeling is subdued. You may then teach him anything you please.

Vegetable Caustic.

Make a strong ley of hickory or oak ashes, put into an iron kettle and evaporate to the consistency of thin molasses; then remove into a sand bath, and continue the evaporation to the consistency of honey. Keep it in a grand stopped glass jar.

This caustic is very valuable in fistulas, cancers, scrofulas and indolent ulcers, particularly where there are sinuses necrosis (or decay of bone) and in all cases where there is proud flesh, and also to excite a healthy action of the parts. It removes fungous flesh without exciting inflammation, and acts but little except on spongy or soft flesh.

To Cure Warts.

Take corrosive sublimate and red precipitate, powdered and mixed, equal parts, and it will cure the worst wart in the world on horses or cattle.

If the wart is large and loose, tie a fine strong cord around it close to the skin. In a short time the wart will come off, then apply the powder until the wart is eaten down below the skin, then wash off and rub on a little sweet oil, and it will soon heal over. If the wart is dry, scratch it with a pin or point of a knife until it bleeds, then rub on the powder. It will make a dry scab; pick off the scab and put on the powder again until it is all eaten off:

Hoof Medicine.

Take Rosin, four ounces; beeswax, five ounces; lard, two pounds; melt together, pour it into a pot, add three ounces turpentine; two ounce finely pulverized verdigris one pound tallow; stir all until it gets cold. This is one of the best medicines for the hoof ever used. It is good for corks or bruises of the foot.

To Restore the Appetite.

Use of pulverized caraway seeds and bruised raisins, four ounces each, of ginger and palm oil, two ounces each. Always use twice as much of the first as of the last, in whatever quantity you wish to make it. Give a small ball once a day until the appetite is restored, use mashies at the same time.

Stoppage of the Bowels.

Take two quarts of soft fresh horse manure, add one quart of

boiling hot water, then strain through a common cloth strainer give one pint as a drench. This will not fail for man or beast for a man, does one tablespoonful every hour until it acts.

Salve for Man or Beast.

For all kinds of old sores, use honey and rosin, melted together; add lard enough to make a paste; when cool, it is fit for use. There is no salve better than this, its medicinal qualities are excellent.

To Soften the Feet.

Spirits of tar, two ounces; fish oil, four ounces. This is very penetrating, to use where the feet are hard and brittle. Rub it in with a brush upon the crust and sole every night.

Stifle.

This is a strain of the stifle muscles only; the stifle joint never gets out; if it should the horse would be worthless. The stifle shoe should never be used.

CURE.—Take the whites of six eggs, and two ounces of alum, pulverized; mix well together, and rub on the stifle muscles; dry with a hot iron. One application will probably be sufficient.

2.—One ounce of sugar lead, one pint of alcohol, mix and apply three or four times a day, until a cure is effected.

Tonics.

Where it is necessary to use tonics, gentian is one of the best vegetables, especially in chronic debility. It is best united with camomile and ginger. Gentian, four drachms; camomile, two drachms; ginger, one drachm; give in balls.

Mercurial Ointment.

Of quicksilver, one ounce; lard, three ounces; stir until there are no globules to be seen. This is used sometimes in preparing sprains and spavins for the regular spavin ointment rubbed on once a day, for two or three days, before using the ointment.

For all slints, bruises, and swelling of the limbs, use thoroughwort and mullen, steeped and applied as hot as possible, with bandages.

Spavin and Ringbone.

Cantharides four ounces, origanum two ounces, sulphate of one ounce, Venice turpentine three ounces murat. tinct.

iron, two ounces, verdigris three ounces, oil vitriol two ounces fresh lard one pound. Shave the hair from the part diseased, and rub the parts with the medicine. You must use your own judgment in using this medicine; that is in the length of time necessary to remove the callus. It must be used every other day, this will dissolve the ossified substance, and ooze it out. When you see the lump is diminished enough, then use the same astringent as I have directed in the other cure, that is, white oak bark and alum, a quarter pound to a half gallon of bark juice, boiled down to a strong decotion. Use morning and evening.

Receipt.

The first-named disease comes at the lower part of the gambrel joint. It is caused by a strain or bruise—either will cause it; this opens the pores and causes the substance to concentrate at one place, and forms in a gristly or bony substance, and causes the joint to become stiff and sore. The horse sometimes becomes lame before enlargement is perceivable. In some cases it will continue to grow for two years; it will then become a hard bone. The enlargement at this stage cannot be removed—you may kill the disease, and kill the lameness. The great object with this disease is stop the leakage. There has nothing been used as an astringent, when by removing the lump without the astringent it leaves the parts loose and open but if used it closes and stops the pores, then, by letting the horse stand until it heaves, becomes firm.

CURE.—Four ounces green euphorbium, fine, one ounce Spanish flies pulverized, four ounces corrosive sublimate, four ounces red precipitate, six ounces white pine turpentine, four ounces iodine, six ounces lard, melt the lard and turpentine together, after it is nearly cold, add the other articles and stir until it is cold, it is then ready for use.

Then rub the enlargement until it is warm, then rub on the ointment and let it remain for twenty-four hours, then take lard and rub upon it until all of the ointment is taken out. Let it remain one day, then apply the medicine again, keep this up until the enlargement is gone; then use oak bark as an astringent to bathe it in, and bandage until well, keeping it well saturated with the oak bark water.

You may use the same ointment for "thorough-pin," after it is blistered sufficiently deep, use the oak bark and bandage until healed. The same for blood spavin and wind puffs. It will be necessary to use a pad under the bandage in "thorough-pin," to make it bear evenly.

Keep the horse quiet, while using these medicines and on a low diet,

To Clean and Oil Harness.

First take the harness apart, having each strap and piece by itself, then wash it in warm soap suds. When cleaned, black every part with the following dye: One ounce extract logwood, twelve grains bichromate of potash, both pounded fine; when put into two quarts of boiling rain water, and stir until all is dissolved. When cool, it may be used. You can bottle and keep for future use if you wish. It may be applied with a shoe-brush, or anything else convenient. When the dye has struck in, you may oil each part with neats foot oil, applied with a paint brush, or anything convenient. For second oiling use one-third castor oil, and two-third neatsfoot oil mixed. A few hours after, wipe clean with a woollen cloth, which gives the harness a glossy appearance,

The preparation does not injure the leather or stitching, makes it soft and pliable and obviates the necessity of oiling as often as is necessary by the ordinary method.

Strength of Food for Horses.

It will, perhaps, be interesting to the horseman and farrier to know how much nutritive matter is contained in the different kinds of food given the horse. The quantity cannot be considered as expressing the actual value of each, because other circumstances beside the simple quantity of nutriment seem to influence their effect in supporting the strength and condition of the horse. Yet many a useful hint may be learned when the farmer looks over the produce of his soil. The list is taken from Sir Humphrey Davy's *Agricultural Chemistry* :

1000 parts of wheat contain 955 parts of nutritive matter.

"	"	barley	"	950	"	"
"	"	oats	"	744	"	"
"	"	peas	"	573	"	"
"	"	beans	"	570	"	"
"	"	potatoes	"	230	"	"
"	"	red-beets	"	148	"	"
"	"	parsnips	"	99	"	"
"	"	carrots	"	98	"	"

Of the grasses, 1000 parts of the meadow catstail contains, at the time of seeding, 98 parts of nutritive matter; narrow-leaved meadow grass in seed, and sweet-scented soft grass in flower, 95; narrow leaved and flat-stalked meadow grass in flower, fertile meadow grass in seed, and talefescue in flower 93; creeping soft grass in flower, 78; common turnips, 42; long-rooted clover, 39; white clover 32; and lucerne 23.

To Cure Cribbing.

If caused by irritation of the teeth growing too near together saw between the upper and lower front teeth, If a simple habit, arrange the stall so as to make it impossible for him to crib. This you can do by making the stall plain, with a simple box manager in front, rather low, but extending the whole width of the stall. Immediately over the front edge of this plain box manager, hang a roller of about six or seven inches in diameter, on pivots, which must be so arranged that it will turn easily. This roller, extending clear across the manager, offers the only means within reach on which to crib. The horse, in cribbing, will press the front teeth firmly upon this roller, pulling down and towards him, which causes the roller to turn from under his mouth, and he is defeated in his efforts. There is no trouble in breaking a young horse of this habit by this means. A very good way is to feed a horse from a basket hung loosely by a cord to something overhead. The roller, proper adjusted, is however, much the best means.

To Prevent Horses Jumping

Have a good firm strap halter made that will fit the horse nicely, with a wide strap stitched to each side so as to come over the eyes. Cut holes in this strap over each eye; over these eye-holes put fine wire-cloth, supported nicely by wires, so that it can not possibly touch the eyes. Before a horse attempts jumping over a fence, he will put his head over to calculate upon the height and distance he is about to jump; but by looking through this wire-cloth everything is so magnified in appearance, that he is disconcerted in his efforts to do so, and is afraid to jump.

Bots or Grubs.

There are a great many horses lost with this disease. It is impossible to put anything down a horse to kill a bot, that would not kill the horse. I will take what the most of farriers will prescribe for this disease, and kill any horse in three or four days, and will give you reasons for it. First, a bot never works when the stomach is in order; as soon as the gasses of the stomach becomes deranged, the bot goes to work—and you can derange the stomach by giving strong medicine. The bot goes to work in the maw; after he gets worked in a short distance, you can put nothing there that he can taste, without letting loose from the maw; and by giving strong medicine, anything that has any tendency to burn or hurt the bot, he would work into the maw to get rid of the medicine; and if you put any sweets down, the bot could not eat it, because his head is in.

Now, I will give you a sure and positive cure for this disease. Take a bucket half full of hot water; then procure a quart bottle; set the bottle down in the hot water; then bleed the horse in the neck vein, and let the blood run into the bottle. When full, drench the horse with this hot blood. The blood goes to the maw so much hotter than the natural stomach, that the bot becomes relaxed and lets loose. He then sucks his fill of this sweet blood, and passes off from the horse.

Quinsy.

The symptoms of this disease are something like inflammation of the lung—difficulty of breathing, eyes inflamed, nostrils distended, breath quick and short; he stands with his head down, and has no disposition to move about, and you will hear a rattling in the throat, caused by an accumulation of mucous matter in the glottis or throttle, which becomes swollen so as to be perceivable on the outside of the throat. A horse with this disease sometimes has an inclination to eat, but with the lung fever—never. Quinsy is entirely an affection of the glands of the head and throat distinct from the lungs.

CURE.—Take one ounce pulverized aloes, to one half ounce oil of sassafras, mix with a little flour to make it thick, and then make into balls the size of a black walnut, or the yolk of an egg—this quantity is for a dose. Open the mouth, pull out the tongue, put the ball on the roots of the tongue, this is the easiest way to give the medicine. A thick heavy blister should be drawn on the throat, and a mustard or fly poultice, to draw the inflammation to the surface. Bathe the limbs with hot water, and bandage them from the hoof to the knee; bathe three or four times a day. When he has a disposition to eat, give a mash of scalded wheat bran—two quarts twice a day. Give no hay or grain for three or four days; then if he breathes easy you can increase the feed. Keep the horse from the wind and well blanketed.

Distemper.

This is a disease that all colts are liable to; and, if taken in time, there will be no danger of swelling in the throat. This frequently causes thick wind. By distempers breaking in the throat, it becomes a callous where the opening in the throat was; then by choking the horse there is not room for the wind, and he wheezes; but as soon as he stops, he breathes easy again. When this disease first makes its appearance, bleed freely from neck vein; then give from a half to one pint of linseed oil, with three drachms of sassafras oil; this thins and purifies the blood.

There are two different modes of nicking. I will give the best and easiest. To make a horse carry an elegant tail is attended with some uncertainty. It much depends upon the spirit, disposition, form and vigor of the bone of the tail, etc. A horse that has good spirits, tolerable shape, and a small bone in the tail, can be made to carry an elegant tail with the greatest ease, particularly if he carries a tolerable natural tail; but a dull, leather-headed, flop-eared horse, with a remarkably large bone in the tail, will set you a task although you break the bone in two or three places. Indeed, there is so much difference in horses, that a great deal of judgment must be exercised about the best mode to be adopted for the accomplishment of the object in view.

Nothing can more disfigure the appearance of a horse than to be half nicked. The form of the tail, when this unfortunately happens, depart from the simplicity of nature, and never attains the elegance of art.

I shall now proceed to the best method of nicking every description of horse, and which, if well attended to, will seldom or never fail to succeed. The horse should be confined in stocks fitted for that purpose. The tail then should be plaited up, and clubbed at the end, turned over a small stick and securely tied with a string. Being provided with a knife made for that purpose, turn the tail up within a direct line with the back; commence the operation by making an incision about one inch from the rump close to the hair, cut the cords in one place on each side, leaving an incision only the size of the knife blade; be very careful not to touch the bone with the knife, for if so, it would create inflammation, and the hair would come out. Great pains should be taken to have the weights equal, in order to keep the tail in a perpendicular direction, and prevent it from turning to either side during the time of healing. as a horse that carries his tail to one side, instead of being elegantly nicked, is ruined.

The horse many times turns a crooked tail before he has been nicked. To straighten the tail, cut the top cord—the under cord depresses the tail, and the top one raises it. When standing, the tail is straight; you will see at once that it is the top cord. In cutting the cord to straighten, cut the long cord, and the short cord will pass by on a lap and grow together, leaving the tail as strong as ever. Pulling is not required in straightening the tail

Scours.

This is a disease which requires no description—you will know it when it comes. It is the same as cholera in a man but is very easy to manage. In a warm climate it is very dangerous, as two-thirds of the horses taken with it, die in three or four days.

CURE.—Boil red or white oak bark to a strong ooze; put two tablespoonfuls of cream of tartar, to one quart of this decoction; give to drink or as a drench—then use the bark water for injection. Keep this up until the purging is stopped, then give a mash of scalded wheat bran twice a day. Give no hay or grain, or you will cause a relapse. He will have a good appetite, but be very careful for several days, and when you commence feeding, feed very light. A positive cure.

Blind Staggers.

The cause of this disease is too much food and water. In giving as much as a horse can eat, then give as much water as he will drink, in driving, the grain becomes swollen and the stomach distended by undigested food. The distention of the stomach prevents the passage of the blood, which causes it to flow to the head, and makes him crazy and blind. Sometimes he will fall back, at other times run, and is apt to run off from a bluff or against any object that may be in his way.

CURE.—If the disease is in its worst stages, split the skin of the forehead and fill with salt and black pepper; then, if you can get sassafras roots, boil to a tea, give one gallon twice a day, bleed one gallon from the neck vein. Feed light with bran mash; do not use any very hearty food for two weeks. This is a sure cure.

Weakness Across the Loins.

This originates many times from a stoppage of water. It is not always what would be called gravel, it may be from contraction of the muscles across the loins. The more the horse strains, the more contraction it would cause. He becomes stiff, and it is difficult for him to move his hind parts.

CURE.—Give one ounce of pulverized aloes; one ounce sweet spirits of nitre, one ounce oil sassafras. Give this as one dose after making into small balls. Then bathe the loins with hot pepper sauce. Blanket the horse well, putting several thicknesses over the loins. As soon as he can stand, give two quarts bran mash, with one tablespoonful of powdered resin. Give this for two or three days, and keep the loins as warm of possible. Also use a liniment, organum, two ounces, oil as

sassafras two ounces; spirit of turpentine two ounces, well mixed together, and bathe the loins twice a day.

Stocked or Swollen Legs.

This is caused by sudden heats and colds.

CURE.—Bathe the legs, from the hoof to the knee, in as hot water as he will bear, and then bandage them; the hot water opens the pores and thins the blood, that has become thick, and will not circulate well. Make a strong tea of sassafras roots, and give it to drink. If not easily procured, give as a purge one pint of linseed or castor oil, half an ounce of oil of sassafras. Feed light, give bran mash with one tablespoonful of cream tartar for a few nights,

To Cure Horse Distemper.

If the glands of the neck are not swoolen much, give half of a three cent paper of smoking tobacco, morning and evening, in a warm bran mash, and give no hay, but a little fine cut straw, wet, with bran mixed in. If the glands of the neck are swoolen, then apply a warm poultice made of wheat bran and hot vinegar, changing as often as the poultice gets dry and be sure to get down all you can of flaxseed tea, or slippery elm tea will answer the same purpose; and let this be his constant drink. Be cautious to keep the horse from taking colds, in any way, and keep on a blanket, and thus you will save many a noble animal. Be cautious never to bleed your horse during the horse distemper, or physic him any more than what you will be able to do with the warm bran mash,

Remedy for Bots.

Which will remove them in a few days: Take of oil of turpentine eight ounces, alcohol one quart; mix and bottle for use. Rose, five ounces in the horse's feed once a day for eight days, and this will effectually remove the last vestige of the bots.

For Inflamed Swellings or Lame Shoulder.

Equal parts oil of amber, oil of spike, camphor gum, ether

To Cure Heaves.

Oil tar, 1 oz; oil amber 1 oz. Mix and give 15 or 20 drops in feed daily.

Physic Ball.

Barbadoes aloes, 1 lb., syrup buckthorn, 3 ounces, eod liver

oil, 3 ounces, melt the whole and stir till cold. In winter, add a little water, make into eighteen pills and give one every four hours, or as much as will move the bowels.

Diuretic Drops.

That are reliable for stoppage of water, foul water, or inflammation of the kidneys in all cases.

Take of sweet spirits of nitre 4 ounces, balsam copavia, 2 ounces, oil juniper two ounces, spirits of turpentine two ozs., gum camphor pulverized one ounce, mix all together, and shake well, bottle and it is ready for use, for man or beast, under all circumstances where a diuretic is required.

Dose.—For a horse one ounce, in half a pint of milk once in six hours, for a man one teaspoonful in a tablespoonful of milk once in six hours. Be sure to shake the ingredients up well before turning out for use.

Colic.

This is caused by giving too much feed and water, or by watering often on the road. The water reduces the juices of the stomach, disabling digestion and causing the grain to swell generates a gas in the stomach, which, passing into the bowels causes the acute pain of Colic. He becomes restive, lies down, rolls about and gives many signs of pain. Many times the horse has bots and colic at the same time, the only difference in the symptoms being that in colic the ears are cold, and in bots they are warm.

CURE.—Take one and a half ounces of laudanum, one ounce of ether, two table spoonfuls soda, in half pint of warm water, give as a drench. Do not exercise the horse with this disease, as exercise causes the gases to move from one part of the bowels to another, each time causing pain, therefore keep him as quiet as possible.

Fistula and Polypii.

These diseases are both of the same nature, caused by a bruise, and the other part becomes swollen, and a mattery substance forms in the flesh; and, as the disease becomes seated, it fills in with pips and roots and increases the inflammation. When, this disease first makes its appearance, it can be driven away by blistering, and drawing the inflammation to one point; but after it forms in roots, or pips, the only way of getting rid of it is to eat out or kill the roots of the disease.

The most effectual way of doing this is to take of euphorbium pulverized one ounce; Spanish lies pulverized one half ounce; tincture of cantharides one half ounce; iodine one ounce;

corrosive sublimate, one ounce; red precipitate, one ounce; white pine turpentine, one ounce and a half; lard, one ounce and a half. Melt the lard and turpentine together, and when it becomes blood warm, as it is cooling off, add the other articles. Use a large dish to mix them in, for when you put them together the mixture will foam; stir until cool, it is then ready for use. If the sore has not broken, use it on the outside until you draw the disease to the surface. If it has broken, put the salve in the wound, it will eat out all of the diseased flesh. When you wish to heal the wound, wash clean with soap, then use as a salve, powdered resin and honey, the best healing salve for horse flesh ever used.

FARMERS AND STOCK OWNERS' DEPARTMENT.

RAREY'S DIRECTIONS FOR BREAKING AND TRAINING OF HORSES.
—In training horses you must remember that there are certain natural laws that govern them. For instance, it is natural for him to kick whenever he gets badly frightened; it is natural for him to escape from whatever he thinks will do him harm. His faculties of seeing, hearing and smelling, have been given him to examine everything new that he is brought in contact with. And so long as you present him with nothing that offends his eyes, nose or ears, you can then handle him at will, notwithstanding he may be frightened at first, so that in a short time he will not be afraid of anything he is brought in contact with. All of the whipping and spurring of horses for shying, stumbling, etc., is useless and cruel. If he shys, and you whip him for it, it only adds terror, and makes the object larger than it would otherwise be; give him time to examine it without punishing him. He should never be hit with the whip under any circumstances, or for anything that he does. As to smelling oil, there is nothing that assists the trainer to tame his horse better. It is better to approach a colt with the scent of honey or cinnamon upon your hand, than the scent of hogs for horses naturally fear the scent of hogs, and will attempt to escape from it, while they like the scent of honey, cinnamon, or salt. To affect a horse with drugs you must give him some preparation of opium, and while he is under the influence of it you cannot teach him anything more than a man when he is intoxicated with liquor. Another thing, you must remember to treat him kindly, for where you require obedience from any subject, it is better to have it rendered from a sense of love than fear. You should be careful not to chafe the lips of your

olt or hurt his mouth in any way, if you do he will dislike to have the bridle on. After he is taught to follow you, then put on the harness, putting your lines through the shaft straps along the side, and teach him to yield to the reins, turn short to the right and left, teach him to stand still before he is ever hitched up; you then have control over him. If he gets frightened, the lines should be used as a telegraph, to let him know what you want him to do. No horse is naturally vicious, but always obeys his trainer as soon as he comprehends what he would have him do; you must be firm with him at the same time, and give him to understand that you are the trainer, and that he is the horse. The best bits to be used to hold a horse, to keep his mouth from getting sore, is a straight bar-bit, 4½ inches long between the rings; this operates on both sides of the jaw, while the ordinary snaffle forms a clamp and presses the side of the jaw. The curb or bridoon hurts his under jaw so that he will stop before he will give to the rein. To throw a horse, put a rope 12 feet long around his body in a running noose, pass it down to the right fore foot through a ring in a spencil, then buckle up the left or near fore foot, take a firm hold of your rope, lead him around until he is tired, give him a shove with your shoulder, at the same time drawing up the right foot which brings him on his knees, hold him steady, and in a few moments he will lie down. Never attempt to hold him still, for the more he scuffles the better.

Take your colt into a tight room or pen, and with a long whip commence snapping at the colt's hind leg, taking care not to hit above the hocks, stopping immediately when the colt turns his head towards you; while his head is towards you, approach him with the left hand extended towards him, holding your whip in the right ready to snap him as soon as he turns his head from you. In this way you can soon get your hands upon him. As soon as you have done this, be careful to caress him for his obedience, and snap him for his disobedience. In this way he will soon learn that he is safest in your presence with his head towards you, and in a very short time you cannot keep him from you. Speak kindly and firmly to him all the time caressing him, calling by name, and saying, "Ho, boy," or "Ho, Diana," or some familiar word that he will soon learn.

If a colt is awkward and careless at first, you must bear with him, remembering that we too, were awkward when young; allowing him his own way, until by degrees he will come in. If he is willful, you must then change your course of treatment, by confining him in such a way that he is powerless for harm until he submits. If he is disposed to run, use my pole check on him; if to kick, fasten a rope around his under jaw, pass it

through the collar and attach it to his hind feet. In this way one kick will cure him, as the force of the blow falls on the jaw. If he should be stubborn, lay him dows and confine him until you subdue him, without punishing him with the whip.

Colts should be broken without blind-bridles; after they are well broke, then you may put on blinds. Bridles without blinds are the best unless you want to speed your horse, then it will be necessary to keep him from seeing the whip. Colts should be well handled and taught to give readily to the rein before they are hitched up. If you hitch them up the first thing and they become frightened; then you have no control over them; but if you teach them to start, stop, and stand at the word before they are hitched, then you can govern them.

CRUELTY TO HORSES—Besides the cruel punishment inflicted upon horses by the careless and heartless driver, he is subjected to severe punishment in the winter season, by being compelled to take frozen bits into his mouth in cold weather, tearing the skin from the tongue and the roof of his mouth, producing a heavy inflammation in the mouth and throat; he gets poor, hidebound, and the sympathetic nerves of the head take up the inflammation, carry it to the head and eyes, frequently producing blindness, and a hundred other diseases. The whip should be used as an instrument of pleasure instead of torture; and your bits should be wound with flannel or leather, so that no frozen iron will come in contact with his mouth, lips or tongue.

RAREY'S LINIMENT.—Sulphuric ether, 4 ounces; hartshorn, 4 ounces; oil of origanum, 4 ounces; alcohol, 4 ounces; sweet oil, 4 ounces. Shake well before using. For sprains on horses &c., apply by rubbing and cover with a tight flannel bandage. For headache, rub a little on the temples and apply a bandage wet with the liniment to the forehead.

RAREY'S WIZARD OIL.—Oil of origanum, 6 ounces; alcohol, 6 ounces, spirits turpentine, 1 ounce; camphor, 1 ounce. Shake well before using.

RAREY'S DIRECTIONS FOR SHOEING HORSES.—"There are very few blacksmiths that ever once think what a complicated piece of machinery the foot of a horse is, and by one careless blow they frequently stop the working of this machine. The majority of smiths, as soon as they pick up a horse's foot, go to work paring the heel, from the fact that it is the most convenient part of the foot, and thereby destroy the heel and braces of the foot, causing, in many instances, contracted heels. The heels of a horse should be well kept up and the toe down. By lowering the heels you throw the entire weight of your horse upon the back tendon of the legs, and thereby produce lame-

ness from overtaking a very important set of tendons. By keeping up the heel you throw the weight upon the wall of the foot. In this position you prevent stumbling, clicking, &c Next the shoer commences to pare away the sole, thins it down until he can feel it spring with his thumb. Ask him why he does this, and he gives you no reason, except from custom; next comes the bars or braces of the foot, they are smoothed down; next in his ruinous course, comes the frogs of the feet, they are subjected to the same cutting and smoothing process. All the cutting, paring, and smoothing of the soles, bars, or frogs is a decided injury to the horse as well as to the owner. All the corns in the land are produced by this process of paring. The frogs have been placed in the foot by nature to expand the wall of the foot, and as soon as you commence to cut it, the oily substance commences to leak out, it dries up, becomes hard, losing its oily substance, makes the wall hard and dry, inducing it to crack. The nerves of the feet are very sensitive and smiths should be very careful not to prick the foot, as it requires quite a time to relieve them. The foot is a very complicated piece of machinery, and if you keep a horse well shod and his foot in good condition, you can then generally manage the balance. The feet suffer from being kept too dry, Horses that stand on board floors should have their feet wet every day or there should be a vat five inches deep, five feet long, and three wide, filled with water and clay, in which each horse can stand for one hour per week, unless his feet are feverish, then he should be kept in it an hour per day, or until the fever subsides. Another source of injury to horses' feet, is the habit of patronizing cheap blacksmiths. If a man can drive a nail, he then sets up a sign as a farrier or a veterinary surgeon, when in fact he knows nothing of the anatomy of the horse's foot, not having spent any time or money in acquiring the necessary information, he can afford to shoe a few shillings cheaper than a well-informed man, but the patrons of such cheap shoeing are generally the sufferers. All horseshoers should be well skilled veterinary surgeons, or there should be a skillful surgeon attached to every shop. Another source of poor shoeing and injury is the loss of elasticity of the frog, refusing to perform its proper functions; the heel contracts, the foot rolls, and you have a sore horse for ten or twelve months, for it requires this long to relieve a horse's suffering from being badly shod.

Under the circumstances, the first thing that touches the road or the floor of the stall, should be the frog, and the wall of the foot should be kept cut so as not to prevent it from touching at every step; and no man that owns a horse should

ever allow a blacksmith to cut the soles, bars, or frogs of his horse's feet. Nature has adapted the frogs to all description of roads, climates, and weather, without being pared. So many horses have been ruined by this process of paring, that there are now several establishments in this country, that manufacture India Rubber pads, thinking thereby to supply the wasted frog and the elasticity of the natural foot. The frog is insensible to pressure, and you may place the whole weight of your horse on the frog and he will suffer no inconvenience, as may be seen from shoeing with one of my corn shoes; besides this is the only reliable way to cure contracted feet; by throwing the weight upon the frog, you force them up between the walls; it acts as a wedge and soon relieves the contracted feet. Smiths should never have their shoes hot when fitting them as the application of hot iron extracts the oily substance from the hoof. The amount of cruel punishment inflicted on horses by cross grained-blacksmiths, is another source of poor shoeing. As soon as the horse does not stand, the smith gets angry, and commences whipping and jerking the animal, which only adds terror to it, so that he soon refuses to go to the shop if he can avoid it; it is natural for horses to dislike to be shod, because the hammering shocks the nervous system, until they are accustomed to it. He should be taught to stand, and his feet well handled at home, before he is ever brought to the shop by the owner. You then save the horse pounding, and the smith an immense amount of labor that he never gets any pay for, for no man ever thinks of paying anything extra for shoeing a bad horse. The wall of the foot should never be rasped above the nail holes, and as little below the clenches as possible; all the rasping and filing but tends to thin and weaken the wall by cutting the fibers of the foot. The nails should be counter-sunk into the shoe, so that there will be no chance for the clenches to rife. No horse interferes with the heel or toe; it is always the side of the foot. The habit of turning the inside of the shoe under causes a number of horses to interfere, that would not if they were shod straight in the inside. Spread the heels as wide as possible; set the outside a little under; keep the toes full. For clicking horses, raise the heels high, cut the toes short. For speedy cuts place your toe corks a quarter of an inch to the inside of the centre of your shoe; keep the heels wide apart. For corns, put on a shoe with a prong, for the main rim, so as to cover the entire frog, pare the wall lower than the frog, so as his entire weight will be thrown on the frog.

Have the inner cork not quite so sharp as the outer one, so that if he steps upon the other foot it will not cut it; make the shoes as light as possible consistent with good service, as they are ordinarily made just about one-third too heavy."

TO PREVENT HORSES KICKING IN THE STALL.—Fasten a short trace-chain about 2 feet long, by a strap to each hind foot. A better way is to have the stalls made wide enough so that the horse can turn in them easily. Close them with a door or bars, and turn the animal loose. After a while he will forget the habit, and stand tied without further trouble.

TO CURE BROKEN LEGS.—Instead of summarily shooting the horse, in the greater number of fractures it is only necessary to partially sling the horse by means of a broad piece of sail, or other strong cloth placed under the animal's belly, furnished with two breechings and two breast girths, and by means of ropes and pulleys attached to a cross beam above, he is elevated, or lowered, as may be required. By the adoption of this plan every facility is allowed for the satisfactory treatment of fractures.

LAMPAS.—This consists in a swelling of the first bar of the upper palate. It is cured by rubbing the swelling two or three times a day with one-half ounce of alum and the same quantity of double refined sugar mixed with a little honey.

GRAVEL.—Steep one-half pound of hops in a quart of water and give it as hot as the horse can stand it.

HALTER PULLING.—A new way to prevent horses pulling at the halter is to put a very small rope under the horse's tail bringing the ends forward, crossing them on the back, and tying them on the breast. Put the halter strap through the ring, and tie the rope in front of the horse. When the horse pulls, he will of course, find himself in rather an uncomfortable position, and discontinue the effort to free himself.

HIDE BOUND.—To recruit a hide bound horse, give nitrate potassa (or saltpetre) 4 ounces, crude antimony 1 ounce, sulphur 3 ounces. Nitrate of potassa and antimony should be finely pulverised, then add the sulphur, and mix the whole well together. Dose, a tablespoonful of this mixture in a bran mash daily.

TO PREVENT HORSES FROM JUMPING.—Pass a good stout surcingle around his body; put on his halter, and have the halter strap long enough to go from his head, between his fore legs, then through the surcingle, and back to one of his hind legs. Procure a thill strap, and buckle around the leg between the foot and joint, fasten the halter strap in this—shorter or longer, as the obstinacy of the case may require. It is also useful to keep colts from running where there is likely to be danger from the result; if the thill strap should cause any soreness on the leg it may be wound with a woollen cloth, and it would be well to change it from one leg to another occasionally.

BIG LEG.—To cure, use the “Blistering Lament” with regularity every third hour until it blisters. In three days wash the leg with linseed oil. In six days wash it clean with soap and water. Repeat every six days until the swelling goes down. If there should be any callous left, apply spavin ointment.

SORE BREASTS.—This generally occurs in the spring, at the commencement of plowing. At times the fault is in having poor old collars, and not having the collar well fitted to the horse's breast; and often, the hames are either too tight or too loose. There is a great difference in horses about getting chafed or galled, and at times it has seemed to be impossible to keep their breasts from getting sore; but a thorough application of strong alum water or white oak bark to the breasts of the animal, three days before going to work, toughen them so that they will not get sore. Another excellent plan is, when you let your team rest for a few moments during work, to raise the collar and pull it a little forward, and rub the breast thoroughly with your naked hand.

THE CHECK REIN ON HORSES.—We desire to register an earnest protest against this barbarous appendage to horses' harness. It retards the horse's progress in every position both while he is at work, and while travelling on a journey. It is both useless and cruel in every sense of the word, without any compensating qualities to recommend it. Mr. Angell, of the “Boston Society for the Prevention of Cruelty to Animals,” who has travelled over a great part of Europe in the interests of humanity to our dumb servants, says, that the use of the check rein is confined to America alone, being deservedly discarded everywhere both in England and on the Continent. The reason why it so discarded, was very graphically explained by an extensive horse owner in Glasgow, as he remarked, in conversation with Mr. Angell, that “We canna get the wark oot'o, the horse wi' the check rein.” To check rein a horse, is equivalent to trussing a man's head backward towards his back or heels, and compelling him, while bound in this position, to do duty with a loaded wheelbarrow.

FEEDING HORSES ON THE ROAD.—Many persons, in travelling, feed their horses too much, and too often, continually stuffing them, and not allowing them to rest and digest their food; of course, they suffer from over-fullness, and carrying unnecessary weight. Horses should be well fed in the evening, and must not be stuffed too full in the morning, and the traveling should be moderate on starting when the horse has a full stomach. If a horse starts in good condition, he can go twenty or twenty-five miles without feeding. The provender required by horses while traveling or engaged in ordinary

farm work, per day, may be stated thus: Hay 20 pounds, oats three gallons, water four gallons. Muddy water is the best for horses. Beeves require twenty pounds of hay and six gallons of water per day. Quantity will vary in every case according to the size, condition, breed, &c., together with the kind of work in which they are employed.

ITCH.—To cure a horse affected with itch, first reduce his daily allowance of food, putting him on a low diet, and then give him a tea-spoonful of a mixture of equal parts of sulphur and antimony, and at the end of a week or ten days the sores will have disappeared and the horse will be covered with a fine coat of new hair.

URINE STOPPAGE.—Symptoms: Frequent attempts to urinate, looking around at his sides, lying down, rolling and stretching. To cure, take half pound of haps, three drachms oil of camphor grind and mix. Make this into three pills. Give one every day with a drench made of a small spoonfull of saltpeter and two ounces of water. This will cure as a general thing.

TO CURE BALKY HORSES.—One method to cure a balky horse is to take him from the carriage, whirl him rapidly around till he is giddy. It requires two men to accomplish this, one at the horse's tail. Don't let him step out. Hold him to the smallest possible circle. One dose will cure him, two doses are final with the worst horse that ever refused to stir. Another plan is to fill his mouth with gravel from the road, and he will at once go, the philosophy of this being that it gives him something else to think about.

DR. COLE'S KING OF OILS.—One ounce green copperas; two ounces white vitriol; two ounces common salt; two ounces linseed oil; eight ounces molasses. Boil over a slow fire fifteen minutes in a pint of urine; when almost cold, add one ounce of oil of vitriol and four ounces spirits of turpentine. Apply to wounds with a feather. A very powerful liniment.

SLOAN'S HORSE OINTMENT.—Four ounces resin; four ounces bees-wax; lard, eight ounces; honey, two ounces. Mix slowly and gently, bring to a boil; then add less than one pint spirits of turpentine; then remove and stir till cool. Unsurpassed for horse flesh, cracked hoofs, human flesh, &c.

MEXICAN MUSTANG LINIMENT.—Petroleum, olive oil, and carbonate of ammonia, each, equal parts, and mix.

MERCHANT'S GARGLING OIL.—Take two and a half gallons linseed oil; two and a half gallons spirits turpentine; one gallon western petroleum; eight ounces liquor potass.; sap green, one ounce; mix all together, and it is ready for use.

ARABIAN CONDITION POWDERS.—Ground ginger, one pound; sulphuret of antimony, one pound; powdered sulphur, one pound; saltpetre, one pound. Mix all together, and adminis-

ter in a mash, in such quantities as may be required. The best condition powder in existence.

BLISTERING LINIMENT.—One part Spanish flies, finely powdered; three of lard, and one of yellow resin. Mix the lard and resin together, and add the flies when the other ingredients begin to cool. To render it more active, add one pint spirits turpentine.

MEDICATED FOOD FOR HORSES AND CATTLE.—Take linseed cake and pulverize or grind it up in the shape of meal, and to every fifty pounds of this ingredient add ten pounds Indian meal; two pounds sulphuret of antimony; two pounds ground ginger, one and three-quarter pounds saltpetre, and two pounds powdered sulphur. Mix the whole thoroughly together, put in neat boxes or packages for sale or otherwise as desired, and you will have an article equal in value to Thorley's Food, or almost any other preparation that can be got up for the purpose of fattening stock or curing disease in every case when food or medicine can be of any use whatever. This article can be fed in any desired quantity, beginning with a few table-spoonfuls at a time, for a horse, mixing it with his grain, and in the same proportion to smaller animals, repeating the dose and increasing the quantity as the case may seem to require.

LOTION FOR MANAGE.—Boil two ounces tobacco in one quart water; strain; add sulphur and soft soap, each two ounces.

FOR STRAINS AND SWELLINGS.—Strong vinegar saturated with common salt, used warm, is good for strains and reducing swellings. One ounce of white vitriol, one ounce of green copperas, two teaspoonfuls of gunpowder, all pulverized together, and dissolved in one quart of soft water, and used cold, rubbing in thoroughly, is one of the best applications known for reducing swellings.

HOOF-BOUND WASH.—Spirits turpentine four ounces, tar four ounces, whale oil, eight ounces. Mix and apply to the hoofs often.

TO TOUGHEN HOOFS.—Wash them frequently in strong brine, and turn brine upon the bottoms and soak a few minutes each time.

SCRATCHES.—Cut off the hair close, and wash the legs in strong soap-suds or urine, or wash with warm vinegar saturated with salt, and afterwards dress over with a small quantity of hog's lard.

COUGH.—Quit feeding musty hay, and feed roots and laxative food. Sprinkle human urine on his fodder, or cut up cedar boughs and mix with his grain, or boil a small quantity of flax-seed, and mix it in a mash of scalded bran, adding a few ounces of sugar, molasses, or honey. Administer lukewarm

If there should be any appearance of heaves, put a spoonful of ground ginger once per day in his provender, and allow him to drink freely of lime water.

SPLIT OR BROKEN HOOF.—Let the blacksmith bore two holes on each side of the crack or split; pass long nails through the holes and clinch tight. After anointing with the hoof-bound liquid, it will soon grow together.

COLIC CURE.—Bleed freely at the horse's mouth; then take one half pound raw cotton, wrap it around a coal of fire, so as to exclude the air, when it begins to smoke, hold it under his nose till he becomes easy.

TO CURE DISTEMPER.—Take one and a quarter gallons of blood from the neck vein; then administer sassafras oil one and a half ounces. Cure speedy and certain.

FOUNDER CURED IN TWENTY-FOUR HOURS.—Boil or steam stout oat-straw for half an hour, then wrap it around the horse's leg quite hot, cover up with wet woolen rags to keep in the steam; in six hours renew the application, take one gallon of blood from the neck vein, and give one quart linseed oil. He may be worked next day.

CURE FOR STAGGERS.—Give a mess twice a week, composed of bran, 1 gallon; sulphur, 1 tablespoonful; saltpetre, 1 spoonful; boiling sassafras tea, 1 quart; assafoetida, 1 1-8 ounces. Keep the horse from cold water for half a day afterwards.

RING-BONE AND SPAVIN CURE.—Venice turpentine and Spanish flies, of each 2 ounces; euphorbium and aqua-ammonia, of each 1 ounce; red precipitate, one-half ounce; corrosive sublimate, one-quarter ounce; lard, one and one-half pounds. Pulverize all, and put into the ard; simmer slowly over coals, not scorching or burning; and pour off, free of sediment. For ring-bones, cut off the hair, and rub the ointment well into the lumps once in forty-eight hours. For spavins, once in twenty-four hours for three mornings. Wash well previous to each application with suds, rubbing over the place with a smooth stick, to squeeze out a thick, yellow matter. This has removed very large ring-bones.

CURE FOR BONE SPAVINS.—\$300 RECIPE.—Corrosive sublimate, quicksilver, and iodine, of each 1 ounce. Rub the quicksilver and iodine together; then add the sublimate, and lastly the lard, rubbing them thoroughly. Shave off the hair the size of the bone enlargement; grease all around it, but not where the hair is shaved off, this prevents the action of the medicine, except on the spavin. Then rub in as much of the paste as will lie on a three cent piece, each morning, for three or four mornings. In from seven to eight days, the whole spavin will come out; then wash the wound with suds for an hour or so, to remove the poisonous effects of the paste; afterwards heal up the

sore with any good healing salve, or Sloan's Horse Ointment¹ as per recipe above, keeping the sore covered while it is healing up.

ANOTHER VERY VALUABLE RECIPE FOR RING-BONE.—Pulverized cantharides, oils of spike, origanum, amber, cedar, Barba-loes, tar, and British oil, of each 2 ounces; oil of wormwood, 1 ounce; spirits turpentine, 4 ounces; common potash, one-half ounce; nitric acid, 6 ounces; sulphuric acid, 4 ounces; lard, 3 pounds. Melt the lard, and slowly add the acids; stir well, and add the other articles, stirring till cold; clip off the hair, and apply by rubbing and heating in. In about three days, or when it is done running, wash off with soap-suds, and apply again. In old cases, it may take three or four weeks; but, in recent cases, two or three applications have cured.

SPLINT AND SPAVIN LINIMENT.—Oil of origanum, 6 ounces; gum camphor, 2 ounces; mercurial ointment, 2 ounces; iodine ointment, 1 ounce; melt by putting all into a wide-mouthed bottle, and setting it in a kettle of hot water. Apply it to bone spavins or splints, twice daily, for four or five days, and a cure is guaranteed.

POLL EVIL AND FISTULA.—Common potash dissolved in one-half pint of water, 1 pound; add one-half ounce belladonna extract, and one ounce gum arabic dissolved in a little water; work all into a paste with wheat flour, and bottle up tight. Directions: Wash the sores well with Castile soap suds; then apply tallow all around them. Next, press the above paste to the bottom of all the orifices; repeat every two days till the callous fibrous base around the poll evil or fistula is completely destroyed; put a piece of oil-cloth over the sores, and afterwards heal up with Sloan's Horse Ointment.

TO TAME HORSES.—Take finely grated horse castor, oils of rhodium and cumin; keep them in separate bottles well corked put some of the oil of cumin on your hand, and approach the horse on the windy side. He will then move toward you. Then rub some of the cumin on his nose, give him a little of the castor on anything he likes, and get eight or ten drops oil of rhodium on his tongue. You can then get him to do anything you like. Be kind and attentive to the animal, and your control is certain.

BEST REMEDY FOR HEAVES.—Balsam of fir and balsam of copaiba 4 ounces, each, and mix with calcined magnesia sufficiently thick to make it into balls; and give a middling sized ball night and morning for a week or ten days.

THE TOILET.

INTRODUCTORY REMARKS

The importance of the subjects of which this volume treats may be gathered from the following chapters, and therefore need only be generally referred to here. That "cleanliness is next to godliness" has been long a household proverb; and that many other duties connected with the "toilet" are subordinate only to personal cleanliness will, I think, be readily admitted. The choice and use of appropriate clothing, both as an ornamental and protective covering for the body, are also matters of equal importance. At the present day a due attention to the requirements, usages, and habits of society in these matters, as in others apparently more important, forms a portion of the common and necessary routine of daily life. Apart from health and comfort, to which I shall again allude, our social position, our welfare and advancement, often materially depend on these points, and are liable to be seriously implicated by their neglect. "A pleasing appearance" is said to be "the first letter of recommendation,"—a simple truth, which it would be insulting the reader to attempt either to gainsay or to strengthen. Happily the Creator, in His wisdom, has not merely endowed man with an instinctive love of

personal cleanliness, but has also implanted in his bosom a feeling of self-pride, or rather say, of self-respect, which, when controlled by reason and good taste, incites him to a laudable, but not an excessive attention to those duties and particulars which it is my dssire to enfore and explain.

Besides those matters just referred to, there are others connected with our daily life, and the state in which we live, which demand the earnest attention of us all, since without it neither health nor beauty can be promoted, and even then existing, must rapidly decay. The complex construction of our bodies, and the various functions of the numerous organs on which both physical and mental life depend, are governed by certain laws, and require for their integrity and well-being certain concomitant conditions that cannot be violated, nor even neglected, with impunity. Among these last, pure air, good and appropriate food, exercise, sleep, and some other matters noticed in the following chapters, may be mentioned.

The necessity of attention to the above subjects being a point which I shall here assume as granted, the causes which lead to their neglect may claim a passing notice. These may be severally referred to absence or a low condition of the nobler moral feelings, to thoughtlessness, indolence, or ignorance, or to excessive vanity or vulgarity. The errors of some persons in these matters may be traced to a degraded or a morbid indifference to their present condition and future welfare, or to absolute inability to appreciate pleasures and luxuries which do not yield immediate pecuniary advantages or sensual gratification; whilst those of others, and not a few, arise from the misdirection of the attention to points of minor importance and temporary display. The relations between the subjects referred to and health, and between health and personal beauty, as between cause and effect, are commonly forgotten. Present convenience and present appearance are the dieties on whose fatal altars the health and fair looks of after-life are commonly sacrificed by the multitude. "Familiarity breeds contempt" of duties, as it frequently does of men. The necessity of constant repetition and frequent attention, instead of leading to greater skill and care, has often a contrary effect. Of the truth of these remarks, there are thousands of living illustrations in every direction we may choose to seek them. Premature baldness, grey hair, pallid cheeks, haggard looks, bilious skin, death-like eyes that once were sparkling, produced neither by unavoidable disease nor by the original curse of man's disobedience, are now so common in our larger towns and cities as no longer to attract attention, or to provoke injury as to their cause. But should this be? It would be useless to argue on the subject. The reader will, I trust, find an answer to the question in the facts recorded in the following pages.

It has been affirmed, and ~~it~~ ^{is} ~~the~~ ^{the} ~~fact~~ ^{fact} ly, that, from the rela-

tive attention paid in any country to cleanliness, the cosmetic arts, dress, and hygiene, and from the respective prevalence, influence, and mutations of custom and fashion, may its claims to civilization, refinement, and luxury be vindicated. Indeed, there appear to be abundant historical, as well as living data, in support of this opinion. They are national characteristics which are almost constantly associated together. We may thus, in general, safely infer the advancement of the last, from the known condition of the others. The disregard of these matters, and the rigid adherence to antique usages and forms, are, in like manner, certain indexes to a state of little progress, or of imbecility and barbarism. I shall avail myself of these facts in the "historical notice" that follows this chapter.

And here a few remarks respecting certain words which form a leading portion of the "title" of this little volume may, probably, be interesting to some of my readers:—

The word "toilet" comes from a nearly similar word in the French language. Originally it simply denoted the cloth or cover of a "dressing-table;" but, like many other words, it rapidly acquired a more extensive application. By a common figure of speech, it soon came to be employed as the name of the table itself, and subsequently as a general term expressive of the mode and various operations of dressing, including all matters immediately connected with personal cleanliness, arrangement, and cosmetic treatment. In the expression "to make one's toilet," it denotes the "careful or usual adjustment of the person, dress," etc. In this way the word has gradually acquired a wide range of signification, and the limited sense, in which it was originally and is still sometimes employed, is almost sunk in the extended figurative ones which usage has assigned to it.

The word "cosmetic" means "beautifying" or "that promotes personal beauty;" and, substantively, anything that possesses this quality." Hence "cosmetics" are "external applications for the promotion, preservation, or restoration of personal beauty." Formerly the term was generally understood to refer chiefly to substances applied to the skin, to improve the color and clearness of the complexion; but later writers usually class under this head every topical application used with the like intention, and thus include a wide range of articles and preparations.

The "cosmetic arts" are all those that have for their object the beautifying of the person, or the improvement of the personal appearance, by external applications and treatment, and include the preparation and use of cosmetics.

In the following pages an attempt will be made to elucidate the subjects of our "title," in all their more important bearings and details—historical, personal, social, hygienic, and medical.

CHAPTER II

HISTORICAL NOTICE.—EARLY AGES.

—————"History, with all her volumes vast,
Hath but one page."

(*Childe Harold*, iv. 108.)

A complete history of our subject would necessarily begin with that of our first parents in Eden, and, following the progress of our race in numbers and civilization, would embrace the long and interesting periods, both antediluvial and postdiluvial prior to the commencement of written history, respecting which all is now involved in doubt and conjecture. That the practice of personal ablution, and even of bathing, has existed from the commencement of the world, is not merely highly probable, but almost certain; since it is founded in the most natural wants and desires of man, and in a well-defined instinct common to almost the whole animal creation. The necessity and comfort of personal cleanliness, of defending the body from the heat of a burning sun and the effects of climate, and the proneness to seek refreshment after the fatigues of the chase, war, or labor, must have taught man, from almost the earliest period of his history, the advantages derived from bathing.

The first "toilet" of man we may, therefore, fairly assume, consisted in mere personal ablution or bathing, followed occasionally by simple adjustment of the hair with the fingers, or with some extemporized implement, to keep it from falling over the face, to prevent it matting together, or to free it when entangled. Then came to Fall, the use of dress, and the expulsion of our first parents from Eden. After the prostration produced by this calamity had passed away, and "children were born unto Adam," the "toilet" and dress would undoubtedly have received more attention; and then it was that "fashion" had its birth. For some time the toilet and dress ~~continued~~ of the simplest kind, and the

fashions that prevailed were equally simple and innocent. The twisted foliage of trees and the skins of beasts were the only garments that then clothed the human race. Wild flowers plucked from the bush, the sunny bank, or the natural pasture, the richly-tinted berries of the trees and shrubs, and the delicate shells of the lake and river margins, were their only ornaments. The only cosmetic that then tinted the beloved one's cheek and lips was the genial sunshine; and the only jewels that decked her person were the diamonds that sparkled in her health-beaming eyes.

As mankind increased in number and gathered into societies, and the various tastes, affections, desires, and passions of human nature—love, vanity, rivalry, ambition, war, etc.,—came into play, the “toilet” and dress would necessarily receive more attention, and the operations of the former would become more numerous and complicated. In many cases these would have for their object the increase of personal attractions, as well as mere comfort and cleanliness. In this way, in all probability, gradually arose the first “cosmetic processes,” properly so called.

CHAPTER III.

HISTORICAL NOTICES CONTINUED :—THE JEWS.

The most ancient written history which we possess—that found in the books of the Old Testament—furnishes no inconsiderable amount of information respecting the social arts and habits of the earlier inhabitants of the world. The *Jews* appear to have been early characterized by a predilection for showy dress, for cosmetics, jewelry, and perfumes, and for the care which they bestowed on various operations of the toilet, particularly those connected with the hair. According to Moses, the art of working in silver, gold, and precious stones, very early reached a state of considerable vanity and excellence, as these substances were then commonly manufactured into ornaments to decorate the person.* Abraham, we are told, “was very rich in cattle, in silver, and in gold;”† so much so, indeed, that he paid “four hundred shekels of silver, current money,” for a “burying-place” for his family.§ The description given us of his chief man servant presenting “a golden ear-ring of half a shekel weight,* and two bracelets for the hand of ten shekels weight of gold,” to the beautiful Rebekah,

* Probably earlier than B.C. 2221; the date assigned by some chronologists to the first Chaldean monarchy, supposed to have been founded by Nimrod, about 25 years after the dispersion at Babel.

† *Genesis*, xiii. 2.

‡ The silver shekel was about equal in value to an English half-crown.

§ *Genesis*, xxiii. 16.

* The shekel-weight was about half an ounce avoirdupois.

as she tripped with her pitcher from the fountain,† may serve to illustrate the usages, taste, and progress of this period; as may also the text which relates that the same “servant” subsequently “brought forth jewels of silver, and jewels of gold, and raiment, and gave them to Rebekah;” and “gave also to her brother, and to her mother precious things.”‡

From the period last mentioned, the taste for personal decoration and display must have steadily progressed, as in the time of Moses it had become a passion among the Jewish people, as well as their Egyptian persecutors.§ When the Israelites begged Aaron to make them “gods” which should “go before them,” he replied, “Break off the golden ear-rings which are in the ears of your wives, of your sons, and of your daughters, and bring them unto me.”|| Nor must the garments and insignia of the priestly office, and the operations connected with it—familiar to every Scripture reader—be passed over here; since they show the addiction to to dress and personal decoration, and the high estimation in which they were thus early held, by this people. The ephod and breastplate were formed “even of gold, of blue and purple and scarlet and fine twined linen,” curiously wrought; and were enriched with precious stones of the most costly description, gorgeously mounted, and engraved “like the engravings of a signet;” the whole being secured to the person and connected with each other by means of rings, and chains of “pure gold” and “wreathen gold,” and “lace of blue.” The “robe of the ephod” was “all of blue;” and “beneath, upon the hem of it,” were “pomegranates of blue, and of purple, and of scarlet, and the bells of gold between them round about.” The coat was embroidered, and “of fine linen;” “the mitre of fine linen,” and “the girdle of needle-work.” These formed “the holy garments for Aaron thy brother, for glory and beauty.”*

From the above, and from other like passages in the Pentateuch, relating to dress, jewelry, and the adornment of the person, we might fairly infer that an equal amount of attention was bestowed, by this ancient and singular people, on their toilet; since, as already noticed, a taste for the one is inseparable from a predilection for the other. This inference is shown to be correct by various subsequent passages in the sacred writings. Perfumes, precious ointments, spices, waters, and other articles connected with the ceremonies of “anointing” and “purification,” and their use as cosmetics, are frequently referred to. Bezaleel “made the holy anointing oil and the pure incense of sweet spices according to the work of the apothecary.”† The Psalmist compares the

† *Gen.* xxiv. 22.

‡ *Gen.* xxiv. 53. About B. C. 2,000; or nearly 4,000 (*i. e.* 3,900) years ago.

§ *Exod.* xi. 2. *et seq.*

|| *Exod.* xxxii. 2. About B.C. 1,500; or more than 33½ centuries prior to the present time.

* *Exod.* xxviii. 2-39.

† *Exod.* xxxvii. 29.

communion of saints and brethren to "the precious ointment (*pommade*) upon the head, that ran down upon the beard;"* and Job, in deprecating the burden of his afflictions, exclaims, "If I wash myself with snow-water, and make my hands never so clean," &c.† When David "returned and came to Jordon," after the conspiracy and death of Absalom, "Mephibosheth, the son of Saul, came down to meet the king (David), and had neither dressed his feet, nor trimmed his beard, nor washed his clothes from the day the king departed until the day he came again in peace."‡ It also appears that very long before this period the arts of medicine and mummification, introduced from Egypt, were not merely known, but evidently studied and practised. "And Joseph commanded his servants, the physicians, to embalm (Jacob) his father, and they embalmed Israel."§ Again, on the death of Joseph, "they (his brethren) embalmed him."||

At a later period, but one not long subsequent to the death of Moses, the operations of the toilet are more distinctly alluded to. It appears probable that about this time "barbers" and "hair-dressers," as well as "perfumers," similar to those of modern times, were common amongst the Jews.

Whether these trades were of native growth, or imported from the monarchies by which the Jews were surrounded, is now uncertain. It is likely that the latter was the case.* However this may be, the instruments and operations connected with these trades are frequently noticed by the sacred writers, and that in a manner which evidently connects them with the habits and usages of the people. "There hath not come a razor upon mine head, for I have been a Nazarite unto God from my mother's womb. If I be shaven then will my strength go from me, and I shall become weak, and be like any other man." And "she called for a man, and she caused him to shave off the seven locks of his head."†

The magnificence and luxury of the reign of Solomon were so remarkable that they have since formed the burthen of a proverb.‡ The description handed down to us of his own palace, of the

* *Psalm cxxxiii. 2.*

† *Job, ix. 30.* It is generally thought that the Book of *Job* was written by Moses. If so, it proves that astronomy, mineralogy, natural history, and their sister arts and sciences, had attained a high degree of advancement at that time.

‡ *2 Sam. xix. 24.*

§ *Gen. I. 2.* About B.C. 1700; or nearly 3,600 years ago.

|| *Gen. I. 26.* See last note.

* See a subsequent allusion to this point.

† *Judges, xvi. 17—11.* This was before the time of David; about A.D. 1500, or nearly 3,000 years ago.

‡ Solomon began his reign B.C. 1011.

"house" (palace) he built "for Pharaoh's daughter," and the Temple, exhibits a degree of extravagance and voluptuousness without a parallel in the history of the Jews. § The example of this monarch appears to have had its effect upon his people; if, indeed, it was not itself a highly exaggerated and luxurious form of that which was already peculiar to them, blended with exotic growths. Perfumes and spices, always highly prized and expensive articles of luxury among the Jews, came into almost general use during his reign. "Ointment (*pommade*) and perfume rejoice the heart," || he sung; whilst in another passage he informs us that "myrrh, aloes, and cinnamon" were used as scents by the courtesans of his day.* These substances are also mentioned by the Psalmist,—"All the garments smell of myrrh, and aloes, and cassia."† The singular fate of Absalom, another son of David, was occasioned, according to popular belief, by the fineness and extreme luxuriance of his hair.‡

The transit of another century in the history of the Israelites places before us a distinct notice of the use of skin cosmetics. We are told that the "proud Jezabel," when preparing to meet King Jehu, "painted her face" (in the original, "put her eyes in painting"), and "tired her head."§

The prophet Isaiah, about a century later, furnishes us with several details connected with the female costume and toilet of his day in "the judgment which shall be for the pride of the women :"—"Because the daughters of Zion are haughty, and walk with stretched-forth necks, and wanton eyes, walking and mincing as they go, and making a tinkling with their feet,"—"the Lord will smite with a scab the crown of the head, and will take away the bravery of the tinkling ornaments about their feet, and their cauls, and their round tires like the moon, the chains, the bracelets, and the mufflers, the bonnets, the ornaments of the legs, and the head-bands, the tablets, and the earrings, the rings, and the nose-jewels, the changeable suits of apparel, and the mantles, the wimples, and the crisping pins, the glasses, and the fine linen, and the hoods, and the veils; and instead of sweet smell (perfume) there shall be a stink; and instead of a girdle, a rent; and instead of well-set hair, baldness; and instead of a stomacher, a girding of sackcloth; and burning, instead of beauty."*

§ 1 Kings, vii. 23-6

|| Prov. xvii. 1.

* Prov. vii. 17.

† Psalm xlv. 8.

‡ 2 Sam. xviii. 9. The passage says that, in his flight, his head was caught by the boughs of an oak, from which he remained suspended. According to some learned writers, his head, and not his hair, was caught and jammed between the thick forked boughs of a terebinth.

§ 2 Kings, ix. 30. B.O. 884. Here *stibium* or *antimony* was used as an eye paint. See note (*) p. 28.

Another century and a half in the history of the Jews, chiefly distinguished by the "captivities" of Israel and Judah, and perpetual political contentions and domestic broils, brings us to the reign of Jehoiachin and the time of the prophet Ezekiel. Here the trade of a "barber," as a separate and common occupation, is clearly mentioned in the prophet's typical foreshadowing of the approaching "judgment of Jerusalem"—Son of man, take thee a barber's razor, and cause it to pass upon thine head, and upon thy beard: then take the ballances to weigh and divide the hair.

In the lamentations of Jeremiah "for the miseries of Judah," about the same period, he alludes to rich dress, Jewelry, and cosmetics, as things in use and highly valued:—"Though thou clothest thyself with crimson, thou thou deckest thee with ornaments of gold, thou rentest thy face" (in the *Heb.* 'eyes') "with painting, in vain shalt thou make thyself fair."

CHAPTER IV.

BEAUTY: ITS CONSTITUENTS AND SOURCES—HYPOTHESIS AND OPINIONS
—PERSONAL BEAUTY—IDEAL BEAUTY—GRECIAN ART AND
SCULPTURES, ETC.

"A thing of beauty is a joy for ever."

(KEATS.)

What is beauty?—what are its constituents?—on what does it depend?—are questions which have been often asked, and which have been differently answered; but out of the vast number of hypotheses on the subject which have from time to time been submitted to the world, there has not resulted any undoubted or universally accepted theory. Of the definitions and views, thus furnished, a few only deserve particular notice.

According to Burke, the constituents of Beauty are chiefly smallness, smoothness, delicacy and other qualities capable of exciting a sense of tenderness and affection, or some other passion the most nearly resembling these, whilst we are yet altogether unaffected by the physical passion of which the object is the beauty of woman; but were this the case, then bulk, ruggedness, boldness of outline, and the like, could never be beautiful.

Some writers endeavor to trace the sources of beauty to certain lines when constituting external form, particularly to curved lines in their various conformations. Thus, Hogarth regarded the wave or serpentine line as essential to the higher class of beauty. That these views are too limited to be correct, even were they right in principle, and that their supporters have mistaken the frequent concomitants of beauty for its primary constituents or elements, will appear evident when it is remembered that the lines which bound the surfaces of objects, and which constitute

their form, are infinitely varied and are often opposite in character, even in those which are equally beautiful. "If there were any original and independent beauty in any particular form, the preference of this form would be early and decidedly marked both in the language of children and the opinions of mankind." But no such preference is shown. On the contrary, the direction of the taste appears to be almost entirely dependent on age and cultivation.

According to St. Austin, "unity is the universal form of beauty." Malespina makes the sources of beauty to reside in "unity, multiplicity, and propriety;" De Crousaz, in "variety, unity, regularity, order, and proportion;" Sulzer and Winckelmann, chiefly in "unity and multiplicity;" Hutcheson, in "uniformity in variety;" Wieland, in "the unity of a pleasing variety;" and the Italian Schools of Painting, in "variety in unity." These opinions, regarded as definitions, are undoubtedly as partial and defective as the former ones; their authors having mistaken the common attributes of beauty for its causes or constituents.

Other writers argue that "color, perfect symmetry, absolute fitness, expression and mental association, either collectively or separately," constitute beauty.

Immanuel Kant, one of the most profound thinkers of modern Germany, conceives that beauty is "irrespective of either utility or design," and "pleases simply by the correspondence of the object and the sense."

Alison declares that "the qualities of matter are only beautiful when they are the expressions of qualities capable of exciting mental emotions." Here it may be remarked, that though color, symmetry, fitness, expression, association of ideas, etc., either singly or united, are capable of exciting human love and admiration, yet all these may and do exist without beauty. They resemble "the talisman concealed in the hair of a hideous slave, which made her an object of passion to an accomplished prince; and which, when removed, caused him to turn away in disgust from the woman he had worshipped. Even so does love fly with the qualities that inspired it. But if, instead of deformity, beauty should remain—would love or passion linger after expression had changed, after bloom had fled, after fitness was lost, after associations were destroyed? Assuredly not. In this case love would be replaced by admiration; the taste would worship instead of the heart; whilst the affections would fly away in search of a new object on which to lavish their devotion."

Beauty must depend on something absolutely independent of the qualities above referred to; since, although they may modify, or even enhance its charms, it can exist in its entirety without them.

Winckelmann and Haydon, "after floundering from obscurity to obscurity," remain apparently satisfied with telling us "where beauty is," instead of "what it is." The former, in reference to

personal beauty (and the same may be applied to all organized beings), supposes it to reside in the youthful form, "in which everything is, and is yet to come—in which everything appears, and yet does not appear;" and in which "the conformation is, as it were, suspended between youth and maturity." He does not, however, deny the existence of beauty in other periods of life; though he holds, that this is the period of its highest development, and the farther the being or object is removed from this point, whether in approach or declension, the fainter the rays of beauty become.

Haydon, the other writer just referred to, declares that "beauty resides only in the female form;" and that when seen elsewhere in any individual of the whole animate world, "it is in exact proportion to the resemblance of the form of that individual to the form of woman."

To the hypotheses of Winckelmann it has been objected, that in the works of the ancients most remarkable for their beauty—particularly in the Venus, the second daughter of Niobe—the palm is clearly seen to belong to maturity. But it may be impugned on wider grounds. "Even supposing beauty," strictly so called, "to be confined to the human form, it belongs to all ages and states—even to declining years—even to death itself. In the latter, it perhaps reaches its acme, and the 'rapture of repose' we (often) see in the coffin before the commencement of decay, is more lovely than the brightest flush of youth." Nor is beauty confined to the human form. It is a "universal principle, which pervades all nature; and the dogma which assigns it to a particular period of human life, must be tested by its application to every other object and condition which exhibits the phenomena of youth and decay," or of freshness, vivacity, or perfection. So of Haydon's opinion, which assigns beauty only to the female form, which is equally partial and unphilosophical; since many beings and objects possessing great beauty are incapable of being compared to the lovely form of woman.

Dr. Knox has recently promulgated the hypothesis, that "all the beauteous and perfect external forms" of living beings, and of man more particularly—the "decorated exterior (only), which nature intended man to see, concealing from him the machinery lying beneath the surface—owes its beauty to many circumstances, but chiefly, and as a *sine qua non*, to the cellulo-adipose elastic layer interposed between the integument and the aponeurotic sheaths and muscles." In other words, that—beauty mainly depends on the concealment of the substance or tissues which lie between them and the skin, which forms the surface of the body, and which, from its very nature, assumes a graceful or flowing outline, opposed to harshness or angularity.

Further on Dr. Knox remarks, "The absolutely beautiful I place in the full-grown woman only—in that figure whose fully

developed proportions satisfy the most fastidious taste for form; whose expression no language can describe, yet is understood by all; in whom the emblems of ever-blooming youth—that youth so cherished, so loved, so adored, still remain combining all possible attractions.” This agrees with the opinion of Haydon, though it is more limited in range.

Another opinion entertained by some persons is, that beauty consists in elegance, grace, lightness of construction, ease of attitude or position, and the like; but these, like unity, symmetry, color, expression, and other qualities already noticed, though often found associated with beauty and enhancing its excellence, do not constitute it; for it may, and very frequently does, exist without them. These no more constitute beauty, or form an essential component part of it, than the aureola that surrounds a luminary does of the body with which it appears to be associated. If you detach from a thing, either mechanically or chemically, any one of its component parts, or either destroy its character, or leave it imperfect. This is true both in art and nature; and to attempt to gainsay the fact, would border on absurdity. “The masterpieces of the ancients—the exponents to all mankind of the idea of beauty—are generally in discolored marble, sometimes in bronze—where then is color as a component part. If expression were detached from them, it is not obvious that this would change merely the moral character, without affecting, in the smallest degree, the physical beauty? What remains is neither marblenor bronze:” it is, according to the writer quoted, “proportion.” If so, *proportion* is beauty. If an exquisitely formed living model “were, by some caprice of nature, to appear of a green color, it would still be beautiful to the eye of taste, however abhorrent to the natural instincts.”

The power of intellect, sentiment, and passion, in illumining and modifying the features, must be familiar to every observer. It is this which distinguishes “personal beauty” from all other classes of the beautiful, and which give it that endless variety of expression, and endows it with those spiritual attractions, which are its peculiar attributes. When the face is animated and glowing with the emotions and operations of the mind—when the eyes are instinct with noble feelings, and the lips curl with the approving smile—when the language of the tongue is accompanied with a corresponding modulation of the features—when ideality becomes almost corporeal—then it is that the influence of the mind over matter and the utmost fascinations of beauty come into play, its latent powers roused into energy, and its inexplicable spells thrown around the soul. The expressions of internal beauty may be figuratively regarded as mental cosmetics, capable of adorning physical beauty with the richest and most enchanting tints, and even raising mediocrity to excellence. But though depending upon the mind, the expressions essentially consist of

temporary modifications of the features arising from change of 'form,' to which color is generally, but not necessarily, super-added; and they may, consequently, be imparted to the marble statue, where form alone is the medium of exhibiting the constituents of beauty. The opinion previously expressed as to the sources of beauty are not, therefore, controverted by, or incompatible with, these admissions.

The several component parts of the human body are separately susceptible of beauty; but it is only when the whole, or the chief of them, possess a certain degree of excellence, and the remainder are not incongruous, that personal beauty of a high order is developed. Without proportion of parts beauty cannot exist; because the undue preponderance of any one, or more, of these parts, is incompatible with the existence of a perfect whole. The mind as readily perceives incongruity, as beauty; and though the former may often be rendered tolerable, and even charming, by expression, or by mental excellence, its existence is immediately recognized and becomes disagreeable, whenever these subside, or are altogether absent. The absence of symmetry or proportion is insensibly associated in the mind with irregularity or deformity.

The human race, as a species, may be said to be scarcely from some peculiarity or defect; not one being exists that is physically perfect; yet instances are common in which extreme beauty of features is associated with an ill-formed person, and a faultless figure with an irregular or an ordinary face. In these cases the effect on the observer usually depends on the dominant quality which, from its superior impression on the mind, leads the other to be either wholly neglected or only slightly noticed. Man came from the hand of his Maker a model of physical beauty and perfection, and would undoubtedly have continued so, had not his own vices and weakness engendered habits and surrounded him with circumstances continually at war with his well-being; to which may be added the effects of climate, violence, and in many cases a degraded social position,—all of which are operative in the same direction. Hence the development of personal beauty may be said to be perpetually interfered with, and restrained within limits more contracted than those prescribed by nature or designed by Providence. For this reason absolute personal beauty—ideal beauty—probably does not and has not existed since the Fall, (whenever that was) except in the works of the sculptor or painter; but approaches to it are still not uncommon in our race. There are writers, however, who entertain the opinion that nature uniformly works upwards, unless disturbed in her course by repelling circumstances; and hold that there are finer women in the England of to-day than those who graced the court of Charles II., and that Byron's Maid of Athens, described with "so much unction" by the poet and certain travellers, would have had altars erected to her in the days of Pericles.

The effect which beauty exercises on the mind, particularly when associated with expression, and illumined with moral excellence and intelligence—those holy lights which burn within—is almost wonderful. Its influence is as extensive as our race.

Nor is this influence peculiar to the human species;—it extends in a diminished degree to the whole animal world. It is probable that fully one-half of the friendships and affections of life are attributable to beauty. The nobler and more spiritual passions, and aspirations, and pleasures, of the human soul, and even intellect and moral worth, are unfolded and promoted by its presence. A mere notice of the influence of personal beauty alone, on individuals and on society, in all ages of the world, would embrace the whole history of the human race. It has, perhaps, owing to the lawless passions and vices of mankind, been productive of more contention than has been caused by ambition, and more misery than has been occasioned by avarice and gold. But, if such have been some of its effects, owing to the sensuous element of man's nature, in the other scale of the balance we have the divine influence of universal beauty over poetry, sculpture, painting, and eloquence, over manners, thought, intellect, and, indeed, everything, every art, faculty, and action of social life and civilization, which by an elevating, inspiring, and guiding principle, can be raised from rudeness, languor, mediocrity, or incipency, to a state of progress, refinement, and dignity. It has given us the most magnificent and heroic statues, the most splendid and truthful paintings, and the most enchanting and heart-stirring poetry. It has strewn the departments of oratory and the pages of literature with their most gorgeous and pleasing flowers. It has given an impetus and an improved expression to all the polite arts; and it has imparted charms to the products of many of the least attractive branches of human industry. In truth, the chief object in the fine arts is the creation of beauty, or the copying of its models; and among these, personal beauty offers the most refined and inexhaustible, and most profitable, theatre for the study and exertions of the artist.

The effect of beauty is uniformly to elevate the mind; and it is only when it is associated with the sensuous passions of the observer, owing to debased moral feelings, that it can possibly have an opposite tendency. We must not, however, forget the old, though vulgar proverb, that "beauty is but skin deep." The mind may live in a reverie of ideal beauty for ever, it may dote upon its objects, and even raise them to the altar of its worship. But it is far otherwise with mere personal beauty as it exists in the living subject. The eye soon becomes accustomed to what it looks upon, be it plain or fair. But the spiritual expression, the sweet smile, the amiable temper, the soothing tone of the gentle voice, the cheerful disposition, the readiness to forget and to forgo when some trifling stumbling-block presents itself in the

road of life—ah! what can compensate for the want of these?—what else can adjust the balance between the material and the spiritual?—what else can link two souls in a life-enduring constancy of friendship and affection, and lead them to look with confidence for a reunion beyond the tomb, and the enjoyment of the beatitude of eternity together? If we would ensure the permanence of mutual friendship and affection, we must seek it in the depths of the heart, where moral beauty is dominant over intellectual beauty, and where both of these, during converse or communion, light up the features, whether plain or beautiful, with the holy and enchanting expression of intelligence, sympathy, and virtue. This happy union of mind and moral excellence, when associated with material beauty, not merely compels admiration, but exerts a power almost amounting to fascination. It is the most precious work of God; it is that condition in which humanity the most approaches the divine.

CHAPTER V.

PROMOTION AND PRESERVATION OF THE PERSONAL APPEARANCE AND BEAUTY—COMMON ERRORS—INFLUENCE OF HEALTH, ETC.

“Health must be there, or beauty cannot be.
The sunken, languid eye, the pallid cheek,
The lax and purple lip, but move the mind
To pity—not to love.”

Much labor is frequently employed, and much expense incurred, to improve and preserve the personal appearance, and to endow it with new charms, or to increase those which it already possesses. Unfortunately, however, although much thought and ingenuity are often expended, or rather wasted, on the subject, the peculiar conditions, physiological, hygienic, and social, on which their excellence and permanence depend, are either only slightly regarded, or partially acted on, when known, and more frequently neglected altogether. With some persons, immediate effect, at whatever sacrifice, and irrespective of consequences, is deemed of more importance than either health or personal cleanliness, or appropriate modes of dressing; and in a few, indeed very few, instances is anything beyond the “mere outside effect of the passing hour” for a moment regarded.

“Are the means I employ natural, or do they assist nature?—are they the most efficient and rational?—are they harmless or injurious?—are questions that are seldom self-asked in the privacy of the boudoir, dressing-room, or bed-chamber. And why is this so? A reply could be easily given, and have no doubt many of my readers can furnish one. Habit and example, and thoughtlessness and indolence, and not infrequently ignorance and vanity, are the powers which generally occasion the various conceits, practices, and negligence just alluded to.

A certain sign of disease, or disordered health, is to be found in the derangement of the pulse. It is known from observation and experience, that the pulsations of the arteries depend on the alternating action of the heart, and are correspondent, if not actually synchronal, to it. Any deviation from the natural standard in the heart's action therefore affects the frequency and particular character of these pulsations, which thus furnish a ready index to the state of the circulation, and through it to the condition of the body. The pulse at the wrist, from the convenience of its situation, is that generally selected for examination. By simply counting the number of its beats per minute, and observing the particular manner in which they are given, a very good general idea may be formed of the state of the system at the time, even by the uninitiated; and thus the presence or approach of disease may be detected.

In health, the "pulse" of the adult varies from 60 to 80 beats per minutes, unless it be excited or depressed by the influence of mental emotions. The average in the adult male is 72. If its rate is below 65, debility or a lax state of the system is indicated; and if it is habitually above 75, some exciting or disturbing cause may be suspected. In females the pulse is usually lower than in males, 65 to 66 beats per minute being about the average; but in those of a feeble or lax habit is not infrequently as low as 60. In infancy and childhood the pulse is much quicker than in the adult. During the "first twelve-month" it ranges from 105 to 125 beats per minutes; during the "second year," from 90 to 110; during the "third year," from 85 to 100; whence its rate gradually lessens until the "sixth" or "seventh" year, when its average is 70 to 75, at about which it keeps for some years after. Towards puberty it usually quickens, and becomes excitable; after which it gradually settles down into the rate peculiar to the constitution or habit of the individual.

The pulse is instantly affected by mental emotions. Those of a violent and exciting kind frequently send it up to 130, or even 145 beats per minutes; whilst those of a depressing nature will sink it to 50, and, in extreme cases, render it for a short time scarcely perceptible. Both of these extremes frequently kill,—the first, by loading the vessels, particularly those of the brain, with blood; the other, by so retarding the circulation of the arterial blood, that there is an insufficient supply of it for the purposes of life. In some fevers the pulse reaches even 140 beats per minute. It also commonly varies a little during the day, being influenced by digestion, exercise, labor, sleep, rest, etc.

On the *choice of colors in dress* much might be said. Taste is required in arranging a bouquet, in order that the colors may blend harmoniously, or be in pleasing contrast. It is the same in laying out a garden, in selecting and placing furniture, in hanging pictures, and even in arranging a shopwindow; and the same

taste is required in regard to dress, if we value its effect on the personal appearance. It is, therefore, wise before purchasing articles of dress, or the materials or trimmings for them, to consider what colors are suitable to the complexion, and what style of pattern is most adapted to the size and figure of the person for whom they are intended; and, having arrived at a decision, to resist any persuasion to purchase or wear any other, merely because persons say it is "fashionable," or "becoming," or assure one that it is a "bargain." This, in respect to color, is particularly necessary with those articles that surround the face and neck.

It may be laid down as a general rule that the dominant color, or tints, of all the articles of dress that come within the range of the eye of the observer, when directed towards the face, should be in pleasing contrast or harmony, and such as blend and harmonize with the complexion without interfering with its purity; or such as improve it by throwing some agreeable tint into it of which it is naturally deficient. Taste, whether natural or acquired by experience from the past successes and failures of ourselves or of others of like complexion and features, will usually be found sufficient to direct the reader in this respect, provided sufficient thought be given to the subject before making the selection. Thus, for example, a brunette should not wear a bonnet nor attire herself in silks of a grave or sombre hue, nor should a blonde with little carnation in her cheeks sully her fairness with rich and very deep colors. In like manner a pale complexion appears much more so when placed in contiguity with pale blue or purple, violet, lilac, or puce; and, if there be a dash of sallowness in it, assumes a sickly, a cadaverous, or even a leaden hue. Black, unless loaded with heavy trimmings round the face, appears more or less to suit all complexions, except the very pale, the very ruddy, the tawny, and the copper-colored. In many cases it causes a coarse, dark, opaque complexion, to appear comparatively fair and agreeable.

These effects of different colors on the complexion, and on each other, depend on the compound nature and properties of light, and on certain natural affections of the eye, which it is well that every one should be acquainted with, from their general application in the arts of dress and ornamentation. If we look for some time, particularly with one eye, on a bright-colored object, as a wafer or a small piece of silk placed on a piece of white paper, and subsequently turn the same eye to another part of the paper, a similarly-shaped spot or mark will be seen, but the color will vary, though it will be always the same under like circumstances. Thus, if the original color be red, the imaginary or accidental one will be green; if black, it will be white; the imaginary color being always "complementary" of that first gazed on. If, instead of the surface on which the eye is subsequently turned being white, it be of any other light color, then the imaginary color will not be complementary of the first one, but a mixture of the surface-

color and the complementary one. This is precisely what occurs, under the same circumstances, to a greater or less degree, when the eye rests on a dress or on the human features and the colors surrounding it. By an attention to these points, the colors best adapted to the complexion of any individual can be easily determined, on scientific principles, before making a selection, a purchase, or a present.

But there are other points in relation to dress besides those connected with health, pattern, color, and the like, which deserve consideration. To be appropriate and becoming, the dress must be suitable to the social position and to the age of the wearer. It raises a smile to see a vulgar woman dressed in the elegant apparel of a polished lady; that which would adorn one merely tends to display the defects of the other. So of those advanced in life, who appear to forget that every age there is an appropriate style of costume. Necks which have ceased to look fair and full, when left open, as in youth, convey an unpleasant impression to the beholder, which no richness of dress, and no elegance of manners are sufficient to remove. The use of a slight frill or collar, or of a silk or gauze handkerchief, tastefully arranged, would obviate the difficulty.

It has been remarked by a recent author on Dress, that "a woman can never be dressed too little, nor a girl too much;" and this appears to be correct within reasonable limits. A gentlewoman needs not to be reminded that she ought at all times to be attired in a neat becoming manner. An elegant simplicity of dress and toilet, with unaffected manners, demands respect, and is always admired by persons of real worth and taste. Indeed, it is as much an evidence of a refined mind, as its neglect is of vulgarity and ill-breeding. Above all things, it must be remembered that the beauty and whiteness of the linen of both sexes, and thorough attention to cleanliness, are among the chief and most palpable distinction between persons of refinement and rank and the common herd of mankind. No richness of the other portions of the apparel, and no amount of care bestowed on the adornment of the person, can possibly compensate for negligence in these points.

The selection of jewels for the head and neck should be guided, as to color, by the same principles as those already indicated in speaking of dress. Diamonds are adapted to almost all complexions. Pearls are nearly the same; they particularly set off the dark-haired brunette, but lose much of their effect when the complexion is pale, sallow, or coarse, and hair light or flaxen. Turquoise, and other stones of like color, and the pink coral now so fashionable, particularly become the healthy blonde; but where the skin is pale or slightly sallow, the former should be avoided. Ornaments in frosted silver well suit the brunette, and particularly set off dark hair. Those in aluminium seldom long prove advantageous,

CHAPTER VI.

CLEANLINESS—ABLUTION—BATHING—BATHS, &c.

Cleanliness is a subject of such importance to our well-being, that little need be said in its favor, were it not that many persons who loudly declaim about it, are negligent of it themselves. That it is essential to the health, comfort, and personal appearance of the individual, is so generally admitted, that even those who do not practise it, are compelled, by their feelings of decency and propriety, to speak in its praise.

In favor of personal cleanliness it is impossible to speak too highly, or say too much. It enhances every charm, and creates new ones peculiar to itself. It invigorates all the numerous functions of the body, and of the mind. It is capable of rendering the most ordinary agreeable, and even the sick and the deformed companionable. Beauty itself without its talismanic influence ceases to attract, or soon palls and satiates the senses it so lately ravished.

It is a mark of politeness and good breeding, and is capable of inspiring the most refined sentiments, affections, and passions. Without it man is unfitted for social intercourse, and his presence in company would prove a manifest cause of offence. It has been justly observed that, "the different nations of the world are as much distinguished by their cleanliness, as by their arts and sciences. The more they are advanced in civilization and refinement, the more they consult this part of politeness." No one perfectly clean in his person can be absolutely disagreeable; whilst no amount of personal charms in features, figure, or complexion, can render an individual companionable without it.

Addison regarded cleanliness as the foster-mother of affection, and as the most enduring of all the auxiliaries of personal beauty.

"Beauty commonly produces love; but cleanliness preserves it. Age itself is not unamiable whilst it is preserved clean and unsullied; like a piece of metal constantly kept smooth and bright, we look on it with more pleasure than on a new vessel that is cankered with rust." But cleanliness is not only agreeable to others, and one of our social duties, it is pleasurable and serviceable to ourselves. Irrespective of its influence on the health and personal charms, its practice has been declared, by one of our recent and highest authorities, to be incompatible with many of the vices that prove destructive to both the body and the mind. "Through the prevalence of custom the most vicious habits lose their horror by being made familiar to us. On the contrary, those who live in the neighborhood of good examples, fly from the first appearance of what is shocking or vicious, and thus pure and unsullied thoughts are naturally suggested to the mind by those objects which perpetually surround us, when they are beautiful and elegant in their kind.

A lady of vast discernment and of equal experience in these matters—herself as lovely and fascinating as she was accomplished and unfortunate—whose name is doubtless familiar to many of my readers, in addressing her sister that formed her audience, observed: “An important, and, I might say, the principal receipt which I shall give you for the promotion and preservation of your beauty is cleanliness, thorough cleanliness in the most extended sense of the word. It is an indispensable thing. It maintains the skin in its softness, the complexion in its lustre and natural hue, the limbs in their pliancy, the whole frame in its vigor and fairest light, the mind in its purity, and the spirits in the buoyancy of youth irrespective of age and condition. The frequent use of tepid water to the person, particularly of the tepid bath, is not less grateful to the senses than it is salutary to health and beauty. It is by such ablutions that accidental corporeal impurities are thrown off, cutaneous eruptions removed, and, while the surface of the body is preserved in its original purity and brightness, many threatening and beauty-destroying disorders are prevented.

Sea-bathing, “on account of its stimulative and penetrating power, may be placed at the head of those means which regard the care of the skin; and it certainly supplies one of the first wants of the present generation, by opening the pores, and thereby re-invigorating the whole nervous system.” “Besides its great power in cases of disease, it may be employed by those who are perfectly well, as the means most agreeable to nature for strengthening the body and preserving the health.” As an agent for promoting and preserving the softness and delicacy of the healthy skin, and the bright hues of the complexion, it is, however, inferior to the warm bath and the tepid bath.

For ordinary bathing to produce its best effects, the water should be soft and pure, and a little good soap sparingly but regularly employed whenever the state of the skin requires it. Hard water tends to make the skin rough and coarse, and is not so cleansing as pure, soft, natural water.

After leaving the ordinary bath, a tepid, or even a cold shower-bath, may be taken with advantage. By employing distilled water for the latter, either alone or combined with a little rose-water (*eau de rose*), or orange-flower water, the luxury and effectiveness of the bath is increased. The addition of three or four ounces of glycerine to this water further improves it, and causes it to impart to the skin a delicacy, and a delightful sensation of softness, obtainable by no other means.

The opinion that the warm bath is relaxing, which we sometimes hear expressed by those who are practically unacquainted with its use, is erroneous. It is only so when persons remain in it too long, or take it too often. As a rule, fifteen to twenty minutes is a sufficiently long space of time to indulge in it; and the

best part of the day is either immediately before retiring to rest, or before dressing in the morning; preferably the first, as a night of refreshing sleep is almost sure to follow it. Neither this or any other bath should be taken on a full stomach, nor soon after a meal. It is better to allow a couple of hours to elapse before doing so. Nor are those who indulge in a warm bath more liable to take cold than others. On the contrary, they are less so, unless they wilfully expose themselves, insufficiently clad (particularly about the neck and chest), to draughts of cold air.

The preceding remarks have reference to personal cleanliness, but it may be also observed here, that domestic or household cleanliness is scarcely less important. Without it the air within our homes would be perpetually vitiated, and the blessings of light and ventilation, and of salubrity of situation, rendered abortive.

After personal cleanliness, and "after this moderation in the indulgence of pleasure which I have recommended," observed Lola Montes at one of her lectures, "the next specific for the preservation of beauty which I shall give you, is that of gentle daily exercise in the open air. Nature teaches us, in the gambols and sportiveness of the lower animals, that bodily exercise is necessary for the growth, vigor, and symmetry of the frame; whilst the too studious scholar and the indolent man of luxury exhibit in themselves the pernicious consequences of the want of it. Many a rich lady would give thousands of dollars for the full rounded-arm and the peach bloom on the cheek of her kitchen-maid. Well! might she not have had both by the same amount of exercise and the same simple and natural mode of living?"

The poet tells us, that—

"Health is the vital principle of bliss,
And exercise of health."

CHAPTER VII.

THE SKIN : ITS BEAUTY, USES, CONSTRUCTION, MANAGEMENT, &c.,

Every person knows what the skin is, its external appearance, and its general properties; but there are many of my readers who may not be aware of its peculiar and wonderful construction, its compound character, and its manifold uses. It not merely acts as an organ of sense, and a protection to the surface of the body, but it clothes it, as it were, in a garment of the most delicate texture, and of the most surpassing loveliness. In perfect health it is gifted with exquisite sensibility, and while it possesses the softness of velvet, and exhibits the delicate hues of the lily, the carnation, and the rose, it is nevertheless gifted with extraordinary strength and power of resisting external injury, and is not only capable of repairing, but of actually renewing itself. "Though

unprotected with hair, wool, or fur, or with feathers, or scales, as with the brute creation, the human skin is furnished with innumerable nerves, which endow it with extreme susceptibility to all the various vicissitudes of climate and of weather, and prompt the mind to provide suitable materials, in the shape of clothing, to shield it under all the circumstances in which it can be placed.

The importance of the due exposure of the body to daylight or sunlight, cannot be too strongly insisted on. Light and warmth are powerful agents in the economy of our being. The former especially is an operative agent on which health, vigor, and even beauty itself depend. Withdraw the light of the sun, with its actinic or chemical rays, from the organic world, and all its various beings and objects would languish and gradually lose those charms which are now their characteristics. In its absence, the carnation-tint leaves the cheek of beauty, the cherry-hue of the lips changes to a leaden-purple, the eyes become glassy and expressionless, and the complexion assumes an unnatural, cadaverous appearance that speaks of sickness, night and death. So powerful is daylight, so necessary to our well-being, that even its partial exclusion, or its insufficient admission to our apartments, soon tells its tale in the feeble health, the liability to the attacks of disease, and the pallid features—vacant and sunken, or flabby, pendent, and uninviting—of their inmates. Even the aspect of the rooms in which we pass most of our time, and the number or extent of their windows, is perceptible, by the trained eye, in the complexion and features of those that occupy them. So in the vegetable world—the bright and endlessly varied hues of flowers, and their sweet perfumes—even their very production—depend on sunlight. In obscure light plants grow lanky and become pale and feeble, they seldom produce flowers, and uniformly fail to ripen their seeds. In even partial darkness the green hue of their foliage gradually pales and disappears, and new growths, when they occur, are blanched or colorless.

The best method of keeping the skin clean and healthy, by ablution and baths, has been already generally alluded to, but here some further details may be given. The use of these, and the washing of the skin that forms part of the daily duties of the toilet, appear to be very simple matters, but writers on the subject differ in opinion as to the methods to be followed to render them perfect cleansers of the skin. Some of these regard the use of soap and water applied in the form of lather, with the hands, and afterwards thoroughly removed from the skin by copious affusions, rinsing or sluicing with water, or immersion in it, as the best method. This is probably the case when the skin is not materially dirty, or its pores or surface obstructed or loaded with the residual solid matter of the perspiration, or its own unctuous

exudation and exuviae. To remove these completely and readily something more than simple friction with the smooth hand is generally required. In such cases the use of a piece of flannel or serge, doubled and spread across the hand, or of a mitten or glove without divisions for the fingers, and of the same material, will be most ready and effective. Friction with this, first with soap, and afterwards with water to rinse the soap off, will be found to cleanse the skin more thoroughly and quickly than any other method, and, by removing the worn-out portion of its surface, to impart to it a healthy glow and hue that is most refreshing and agreeable. This effect will be increased by wiping and rubbing the surface thoroughly dry with a coarse and moderately rough, but not a stiff towel, instead of with the fine smooth diapers, which are now so commonly employed. At the bath, the flesh-brush, usually provided there, will supersede the necessity of using the flannel.

The small black spots and marks frequently observed on the skin in hot weather, particularly on the face, generally arise from the accumulation of the indurated solid matter of the perspiration in its pores. When they assume the form of small pimples (*acne punctata*), and often when otherwise, they may be removed by strong pressure between the fingers, or between the nails of the opposite fingers, followed by the use of hot soap-and-water.

The subsequent daily application of a weak solution of bichloride of mercury, as in the form commonly known as Gowland's lotion, or of sulphate of zinc, will completely remove the swelling, and generally prevent their reformation.

Dandriff is an exfoliation of the skin which differs from common scurfiness, chiefly in occurring in reddish patches. In its exaggerated forms, when the patches are irregular, and the cuticle is thrown off in large scales, accompanied with much irritation, it forms the "pityriasis" of pathologist, and the "branny tetter" of the vulgar. Its treatment consists in extreme cleanliness, the frequent use of warm soap-and-water, and attention to the diet, as noticed below under "eruptions." The itching and irritation may also be allayed, or greatly lessened, in the manner there indicated.

Eruptions are too well known to require any lengthy description here. They are usually classified by writers on the subject into—animalcular eruptions, or those due to the presence of animalcula (minute acari) in the scarf-skin, which occasion much irritation, and of which the itch furnishes a well-marked example; papular eruptions or dry pimples;—pustular eruptions or matery pimples, of which some forms are popularly known as crusted tetter;—scaly eruptions or dry tetter; and—vesicular eruptions or watery pimples or vesicles.

The treatment of all of the above, except the first, is simply

cases, where there is not much constitutional disarrangement, consists mainly in attention to the general principles of health—cleanliness, exercise, food, ventilation, and clothing. Occasional doses of mild saline aperients (Epsom-salts, cream of tartar, or phosphate of soda, or of sulphur combined with cream of tartar), should be taken, and warm or tepid bathing, preferably in sea-water, or ablution in warm soap-and-water, frequently had recourse to. Stimulents of all kinds should be avoided, and the red meats, ripe fruits, and the anti-scorbutic vegetables, should form a considerable portion of the diet. Lemonade, made by squeezing the juice of a lemon into a half-pint tumblerful of water, and sweetening it with a little sugar, should be frequently and liberally taken, as one of the best beverages in such cases. To relieve the itching and irritation (except in the pustular, crusted, and vesicular varieties), brisk friction with a flesh-brush or a flesh-glove, may be employed. The parts should also be wetted with an appropriate lotion. after each friction or bath, or the use of soap-and-water.*

In all the scaly eruptions iodide of potassium internally, and ioduretted or sulphuretted lotions or baths, are invaluable. In many of them of a malignant and obstinate character, as *lepra psoriasis*, *lupus*, &c., small doses of solution of arsenite of potassa (liquor arsenicalis,)* or of Donovan's solution (solutio arsenici et hydrargyri iodidi),† prove highly serviceable. The last is probably the most active and certain remedy in such cases known. In the forms of psoriasis, popularly called bakers' itch, grocers' itch, and washerwoman's itch, the application of ointment of nitrate of mercury (unguentum hydrargyri nitratis), diluted with ten or twelve times its weight of lard has been highly recommended. A course of sarsaparilla is also in most cases advantageous.

The small, hard, distinct pimples—"acne," or acne simplex" of medical writers—that occur on the forehead, and occasionally on the temples and chin, generally yield to stimulating lotions consisting of equal parts of strong spirit or vinegar, and water, or to weak lotions of sulphate of zinc, or of bichloride of mercury, assisted by occasional doses of cooling laxatives, as the salines, or a mixture of sulphur or cream of tartar.

Freckles, or the round or oval-shaped yellowish or brownish-yellow spots, resembling stains, common on the face and the backs of the hands of persons with a fair and delicate skin who are much exposed to the direct rays of the sun in hot weather, are of little importance in themselves, and have nothing to do with the general health. Ladies who desire to remove them may have

* The dose is 3 to 5 drops, gradually and cautiously increased to 8 or 10, twice a day, after a meal.

† Dose, 10 to 20 drops, twice a day, as the last. Both these preparations are better used only under medical advice. (*Vide Index*.)

recourse to the frequent application of dilute spirit, or lemon-juice, or a lotion formed by adding acetic, hydrochloric, nitric, or sulphuric acid, or liquor of potassa, to water, until it is just strong enough to slightly prick the tongue. One part of good Jamaica rum to two parts of lemon-juice or weak vinegar, is a good form of lotion for the purpose. Gowland's lotion, referred to elsewhere, is also an effective application. The effect of all these lotions is increased by the addition of a little glycerine.

The preceeding are also occasionally called "common freckles," "summer-freckles," and "sun-freckles." In some cases they are very persistent, and resist all attempts to remove them while the exposure that produces them is continued. Their appearance may be prevented by greater use of the veil, parasol or sunshade, or avoidance of exposure to the sun during the heat of the day.

Another variety, popularly known as cold freckles, occur at all seasons of the year, and usually depends on disordered health or some disturbance of the natural functions of the skin. Here the only external application that proves useful is the solution of bichloride of mercury (P. L.) and glycerine, or Gowland's lotions.

The itch—"psora" and "scabies" of medical authors, the "gale" of the French—already referred to, in its common form is an eruption of minute vesicles, generally containing animalcula (acari), and of which the principal seats are between the fingers, bend of the wrist, &c. It is accompanied by intense itching of the parts affected, which is only aggravated by scratching. The usual treatment is with sulphur-ointment (simple or compound), well rubbed in once or twice a day, a spoonful (more or less) of flowers of sulphur, mixed with treacle or milk, being taken at the same time, night and morning. Where the external use of sulphur is objectionable, on account of its smell, a sulphuretted bath or lotion, or one of chloride of lime, may be used instead. In all cases extreme cleanliness, with the free use of soap-and-water, is a *sine qua non* in the treatment.

The small soft discolorations and excrescences of the skin, popularly called moles, may be removed by touching them every second or third day with strong acetic or nitric acid, or with lunar caustic. If covered with hair, they should be shaved first. When they are large and form the *navi* (proper)—the "mother-marks" of the vulgar—one or other of the plans noticed under "small-pox" (*infra*) may be adopted.

Extreme paleness of the skin, when not symptomatic of any primary disease, generally arises from debility, or from the languid circulation of the blood at the surface of the body; often also from insufficient or improper food, want of out-door exercise, and the like. The main treatment is evident. Warm baths,

friction, and stimulating lotions and cosmetics may be here employed, together with a course of some mild chalybeate (as the lactate, protophosphate, or ammonia-citrate of iron), and hypophosite of soda.

Roughness and coarseness of the skin, when not depending on any particular disease, may be removed, or greatly lessened, by daily friction with mild unguents or oil, or by moistening the part, night and morning, with a weak solution of bichloride of mercury containing a little glycerine.

Rashes and redness of the skin, of a common character, often arise from very trifling causes, among which indigestion, suppressed perspiration, irritation, and the like, are the most frequent. Nettle-rash or urticaria, so called from the appearance and tingling sensation resembling those caused by the sting of nettles, in some habits of body, is very apt to follow the use of indigestible and unwholesome food. It is usually of short duration and recurrent. The treatment consists in the administration of mild saline aperients, and, in severe cases, of an emetic, particularly where the stomach is still loaded with indigestible matter. These should be followed by copious use of lemonade made from the fresh-expressed juice. The patient should be lightly but warmly clothed during the attack, and exposure to cold, or to draughts of cold air, should be carefully avoided. The further treatment may be similar to that noticed under eruptions. To prevent the recurrence of the attack the objectionable articles of food, and any other known exciting causes, must be avoided. Red rash, red blotch, or fiery spot, a common consequence of disordered health, a sudden fit of dyspepsia, and in females, of tight lacing, and rose-rash, false measles, or roseola, having commonly a similar origin to the preceding, for the most part require the same treatment.

Scurf—"furfur," or "furfura"—is a formation depending on the natural and healthy exfoliation of the skin on every part of the body on which hair or down grows, but most extensive and observable on the scalp, on account of the abundance and darker color of the hair there. Scurfiness, or excessive scurfiness, is the result of morbid action, and may be treated by the frequent use of the flesh-brush or hair-brush, ablution with soap and water, and the use of mild, stimulating, astringent, or detergent lotions.

Scurvy—"scurbutus" of medical writers—is a disease which, even in its incipient and early stages, when its presence is often unsuspected, is most injurious to the skin and the complexion. It usually commences with unnatural sallowness, debility, and low spirits. As it proceeds, the gums become sore, spongy, and apt to bleed on the slightest pressure or friction; the teeth loosen, and the breath requires a foetid odor; the legs swell, eruptions appear on different parts of the body, and at length the patient sinks under general emaciation, diarrhoea, and hæmorrhages. Its

chief cause is improper food, or rather the absence or insufficient supply of fresh meat and vegetables in the diet; to which cold, humidity, want of exercise and fresh air, may be added as secondary ones. Hence its frequent fatal visitations formerly on ship-board, and its still occasional occurrence in ill-victualled ships during long voyages. The treatment mainly consists in adopting a liberal diet of fresh animal food and green vegetables, with ripe fruit and an ample allowance of good mild ale or beer, or lemonade made from the fresh-expressed juice, as beverages. Effervescing draughts formed with bicarbonate of potash (not soda) are also very efficacious. In serious cases, tonics, as quinine and steel, should also be administered.

Wrinkles and looseness of the skin depend chiefly on the attenuation of the cutis or true skin, and the reduction in the bulk of the underlying surfacial portions of the body. They cannot be regarded as a disease of the skin; but are the result of long-continued bad health, anxiety and study, and of general emaciation and old age. Cleanliness, nutritious food, vigorous out-door exercise, agreeable occupation of the mind, and an equable and happy temper, retard their formation. Whatever tends to promote the general health, and to increase the bulk of the body, and particularly the disposition of fat in the cellular tissues, also tends to remove them, and to increase the smoothness and beauty of the skin. The free and frequent use of warm soap-and-water, followed by the daily use of mild, stimulating, cosmetic lotions or fomentations, or friction with warm oil of a like character, and cod-liver oil internally, is all that art can do for the purpose.

Excoriations, in popular language, are those cases of soreness produced by chafing under the arms, behind the ears, between the thighs, and in the wrinkles and folds of the skin generally. They occur chiefly in infancy, and in stout persons with a delicate skin, who perspire excessively. Extreme cleanliness, and carefully wiping the parts dry after washing, with the subsequent use of a little violet-powder or finely powdered starch, or French chalk scraped or grated very fine, dusted over the parts once or twice a day, will generally remove them and prevent their recurrence.

CHAPTER VIII.

THE HAIR : ITS ESTIMATION, STRUCTURE, GROWTH, MANAGEMENT, ETC.

The hair is not only invaluable as a protective covering of the head, but it gives a finish and imparts unequalled grace to the features which it surrounds. Sculptors and painters have bestowed on its representation their highest skill and care, and its description and praises have been sung in the sweetest lays by the poets of all ages. Whether in flowing ringlets, chaste and

simple bands, or graceful braids artistically disposed, it is equally charming, and clothes with fascination ever the simplest forms of beauty :—

“O wondrous, wondrous, is her hair !
A braided wealth of golden brown,
That drops on neck, and temples bare.”

If there be one point more than another in which the tastes of mankind appear to agree, it is that rich, luxuriant, flowing hair, is not merely beautiful in itself, but an important—nay, an essential auxiliary to the highest development of the personal charms. Among all the refined nations of antiquity, as in all time since, the care, arrangement, and decoration of the hair, formed a prominent, and generally the leading portion of their toilet. The ancient Egyptians and Assyrians, and other Eastern nations, bestowed on it the most elaborate attention. The ancient Jews, like their modern descendants, were proverbial for the luxuriance and richness of their hair, and the care which they devoted to it. Glossy, flowing, black hair is represented to have been the ‘glory’ of the ancient Jewess, and in her person to have exhibited charms of the most imposing character; whilst the chasteness of its arrangement was only equalled by its almost magic beauty. Nor was this luxuriance, and this attention to the hair, confined to the gentler sex; for among the pagan Orientals the hair and beard of the males were not less sedulously attended to. Among the males of Judah and Israel, long flowing ringlets appear to have been regarded as highly desirable and attractive. The reputed beauty and the prodigious length and weight of the hair of Absalom, the son of David, as recorded in the sacred text, would be sufficient to startle the most enthusiastic modern dandy that cultivates the crinal ornament of his person. Solomon the wise, another son of David, conceived the beauty of the hair sufficiently dignified to express figuratively the graces of the church.

The hair, though devoid of sensibility, and unsusceptible of expression under the influence of the will and the ordinary mental feelings, like the mobile portions of the face, and though it may be popularly regarded rather in the light of a parasitic growth than as an essential portion of the body, it is capable of being affected by the stronger emotions and passions, and even of aiding their expression in the features. Who is there that, at some period or other of his life, if only in childhood, in moment of sudden terror or horror, has not experienced the sensation popularly described as “the hair standing on end”? or who is there that, at some time or other, has not witnessed the partial erection of the hair in children or females under like violent emotions, or seen the representation of it in sculptures or paintings? * Those

* Both the sensation, and the erection referred to, actually belong to and depend on the skin, from which the hair springs.

passions, so aptly styled by Gray "the vultures of the mind," frequently affect, with wonderful rapidity, the health of both the body and the mind, which wreck the hair soon sympathizes with and shares. Instances are recorded in which violent grief, in a few weeks, has blanched the hair and anticipated the effects of age; and others, in which intense terror or horror has effected the same with even greater celerity, the change having occurred in a few days, or even in a few hours.† Byron alludes to these facts in his "Prison of Chillon":—

"My hair is gray, but not with years,
Nor came it white
In a single night,
As men's have done from sudden fear."‡

Besides daily attention to the hair, something else is necessary to ensure its cleanliness and beauty, and the perfect health of the skin of the head from which it springs. For this purpose the head should be occasionally well washed with soap-and-water, an abundance of water being used, and great care being subsequently taken to thoroughly rinse out the whole of the soap with the water in which the head has been washed. The water may be either tepid or cold, according to the feelings or habit of the person; and if the head or hair be very scurfy or dirty, or hard water be used, a few grains of soda (not potash or pearlash) may be advantageously added to the water. This will increase its deterative qualities. After the hair has been washed, which should be done quickly though thoroughly, it should be freed as much as possible from the water by pressure with the hands, and then wiped with a soft thick towel, which should be done with care, to avoid entangling it. After laying it straight, first with the coarse end of the dressing-comb and then with the finer portion, it may be finally dressed and adjusted by either of the methods previously noticed.

In ordinary cases this act of cleanliness should be much exposed to dust and dirt, or is very scurfy, or the party perspires very freely, it should be performed semi-weekly, or even oftener.

The extreme length of ladies' hair will sometimes render the process of washing it very troublesome and inconvenient; in such cases the patient and assiduous use of a clean, good hair-brush, followed by washing the partings and the crown of the head with soap-and-water, may be substituted.

† A case of this kind actually occurred within the author's knowledge some years since. It arose from the violent emotions caused by sudden loss of his ship, and subsequent exposure, the victim being the captain.

‡ "Ludovico Sforza, and others. The same is asserted of Marie Antoinette's, the wife of Louis XVI., though not in quite so short a period. Grief is said to have the same effect; to such, and not to fear, its change in her is to be attributed." *Allude to the "Prison of Chillon."*)

The occasional washing of the head is absolutely necessary to preserve the health of the scalp, and the luxuriance and beauty of the hair, when much oil, pomatum, or other greasy substance is used in dressing it.

Medical writers have frequently pointed out the ill effects of the free or excessive use of oily or greasy articles for the hair; but their warnings appear to be unheeded by the mass of mankind. Erasmus Wilson, one of the most eminent and practical of these writers, objects to their use altogether. There are, however, exceptions to every rule, and some of these exceptions are noticed elsewhere in this volume. The ill effects referred to chiefly occur from their being used when not required, and in excess, and are aggravated by the neglect of thorough cleanliness.

To improve the growth and luxuriance of the hair, when languid or defective, the only natural and perfectly safe method that can be adopted is to promote the healthy action of the scalp by increasing the vigor of the circulation of the blood through its minute vessels. For this purpose nothing is so simple as a deffective as gentle excitation of the skin by frequent continued friction with the hair-brush, which has the convenience of ease of application and inexpensiveness. The same object may be further promoted by the application of any simple cosmetic wash, or other preparation, that will gently excite and stimulate the skin, or exercise a tonic action on it, without clogging its pores. Strong rosemary-water or rosemary-tea, and a weak solution of the essential oil of either rosemary or garden-thyme, are popular articles of this kind. They may be rendered more stimulating by the addition of a little ammonia, or a little spirit, or both of them. The skin of the head should be moistened with them on each occasion of dressing the hair, and their diffusion and action promoted by the use of a clean hair-brush. Aromatized water, to which a very little tincture or vinegar of cantharides (preferably the former has been added, may also be used in the same way, and is in high repute for the purpose. When the skin is pale, lax, and wrinkled, astringent washes may be used. Strong black-tea is a convenient and excellent application of this kind. When the skin and hair are dry, and the latter also stiff and untractable, a little glycerine is an appropriate addition to each of the proceeding washes or lotions. The occasional use of a little bland oil strongly scented with oil of rosemary or of origanum, or with both of them, or with oil of mace, or very slightly tintured with cantharides, is also generally very serviceable when there is poorness and dryness of the hair. When the hair is unnaturally greasy and lax, a defect that seldom occurs, the use of the astringent washes just referred to, or of a little simple oil slightly scented with the essential oil of bitter almonds, will tend to remove or lessen it.

All the articles named above promote the glossiness and waviness of the hair, and are also among the simplest, safest, and and best applications that can be employed when the hair is weak and begins to fall off.

To impart some degree of curliness or waviness to the hair when it is naturally straight, and to render it more retentive of the curl imparted to it by papers, or by other modes of dressing it, various methods are often adopted, and different cosmetics employed. The first object appears to be promoted by keeping the hair, for a time, in a state intermediate between perfect dryness and humidity, from which different parts of its structure being unequally affected, in this respect, will acquire different degrees of relaxation and rigidity, and thus have a tendency to assume a wavy or slightly curly form, provided the hair be left loose enough to allow it. For this purpose nothing is better than washing the hair with soap-and-water to which a few grains of salt of tartar (carbonate of potash) have been added; or it may be slightly moistened with any of the hair-washes mentioned in the last paragraph, in each half-pint of which a few grains (say 10 to 12) of the carbonate, or a teaspoonful of glycerine, has been dissolved. The moistened hair, after the application of the brush, should be finally loosely adjusted, as desired, with the dressing-comb. The effect occurs as the hair dries. When oils are preferred to hair-washes, those strongly scented with the oil of rosemary, to which a few drops of oil of thyme or origanum may be added, appear to be the most useful.

A crisped, or kind of wavy corrugated appearance, of some permanency, is sometimes given to living human hair by a modification of the process applied by the pelt-mongers and felt-manufacturers to certain furs, and called "secretage" by the French. The hair is moistened for rather more than one-half its length with the secretage liquid, care being taken that neither the liquid, nor the hair, until it has been subsequently washed, touches the skin. The operation is conducted before the fire, or in a current of warm air, so that the hair may dry as quickly as possible. The moistened hair is loosely adjusted into the desired positions, or into one favorable for its contraction, or, when partly dry, it is "put up" in greased curl-papers. In a few hours, or sooner, the hair is washed with tepid water (without soap), dried, and slightly oiled. On being now gently combed and brushed, it generally shrinks up into small crisped or wavy locks; and it will generally retain this property for two or three weeks, or even much longer. This process is highly objectionable, as, owing to the corrosive nature of the acid-liquid employed in it, it cannot be otherwise than injurious to the hair, and, as a consequence, must hasten its decay. It should, therefore, be avoided by every one; and it is only noticed here, that its true character may be known.

To cause the hair to retain the position given to it in dressing

it, various methods and cosmetics are commonly employed. When the arrangement is a natural one, and the hair healthy and tractable, the free use of the hair-brush will usually be sufficient for the purpose. When this is insufficient, the application of a few drops of oil, or, better still, moistening the hair with a little simple water, will effect the object satisfactorily. In very elaborate and unnatural styles of dressing the hair, and to cause it to remain in curl or to retain its position during dancing or violent exercise, bandoline, fixateur, and cosmetique or hard pomatum, are the articles commonly employed in fashionable life. Mild ale or porter has a similar effect, and is often substituted for the proceeding expensive cosmetics in humble life. The frequent use of any of these articles is objectionable, as they clog up the pores of the skin, and shield both it and the hair from the genial action of the atmosphere, which is essential to their healthy vigor. They should hence be subsequently removed by carefully washing the head with a little soap and tepid water. Their use may be tolerated in dressing for the ball-room, but on no other occasion. Simple water, skilfully employed, as noticed elsewhere, is the best and safest fixateur, and, under ordinary circumstances, is amply sufficient for the purpose.

The practice of artificially changing the color of the hair, and particularly of dyeing it, has descended to us from remote antiquity; and though not so common in western Europe as formerly, is still far from infrequent at the present day. This might be inferred from the multitude of nostrums for the purpose continually advertised in the newspapers, and from the number of persons who announce themselves as practising the art, even though the keen and experienced eye did not frequently detect instances of it, as it now does, in the hair and beards of those we see around us. The recent rage after light auburn and reddish hair, in fashionable life, has, unfortunately, greatly multiplied these instances. The consideration of the subject, however, in its ethical relations, does not come within the province of the present work, and I shall confine myself to pointing out how the color of the hair may be changed in the safest and most satisfactory manner.

To change the color of the hair, various methods and preparations are employed. The principal of these are intended to darken it; but, sometimes, the contrary is aimed at. Whichever object is desired, it is necessary that the article or preparation employed to carry it out, be not of a caustic or irritant nature capable of injuriously affecting the delicate skin to which it is to be applied, or that it may be liable to come into contract with, as is the case with many of the nostrums vended for the purpose. Some of the substances that necessarily enter into the composition of hair-stains and hair-dyes, or that are used in connection with them, possess these objectionable properties in a high degree, and can

therefore, only be safely employed in a state of proper dilution and combination. If any doubt exists respecting such an article, it is a wise precaution to regard it with suspicion, and to test its qualities before applying it for the first time. This may be done by placing some of it on the soft skin of the inner side of the wrist or fore-arm, and allowing it to remain there as long, and under the same conditions, as it is ordered to be left in contact with the hair or skin of the head or face. In this way, the injury or loss of the hair, sores, and other serious consequences, that too often follow the use of advertised and ill-prepared hair-dyes, may be generally avoided.

To gradually darken the shade of the hair, on these principles, provided its normal sulphur be still secreted by the hair-bulbs, and be still present in its structure, it will, therefore, generally be sufficient to occasionally employ a weak solution of any of the milder salts of iron as a hair-wash. The menstruum may be water, to which a little spirits, and a few drops of oil of rosemary to increase its stimulating qualities, have been added. In applying it, the head being first washed clean, care should be taken to thoroughly moisten the whole surface of the hair and the skin of the head with the wash; and its absorption and action should be promoted by the free use of a clean hair-brush. Wine is the favorite solvent for the iron in fashionable life; ale and beer are also sometimes so employed. Most of the fashionable ferruginous hair-washes also contain a few grains acetate of copper or distilled verdigris, the objections to which have been already pointed out.

The daily use of oil, or pomatum, with which a few grains of carbonate of lead, lead-plaster, or trisnitrate of bismuth, have been blended by heat and careful trituration, has generally a like effect on the hair to ferruginous solutions; so also has a leaden comb, but its action is very uncertain. None of these last are, however, safe for long-continued use. Atrophy of the scalp, baldness, and even local paralysis, have sometimes, though rarely, been caused by them.

When the normal sulphur of the hair is absent, or deficient, the proceeding substances fail to darken the hair. In this case the desired effect may often be produced by also moistening the head (say) twice a week, with water to which a little sulphuret of potassium, or hydrosulphuret of ammonia, has been added.

When it is desired to dye or darken the hair more rapidly, as in a few hours, or even a few minutes, plumbite of lime, plumbite of potassa, or nitrate or ammonio-nitrate of silver, is usually employed. The first is commonly produced by the admixture of quick-lime with oxide of lead (litharge), carbonate of lead, or acetate of lead. These ingredients should be in appropriate proportions; but very generally the reverse is the case in those of the shops.

It may be laid down as a rule, that when the lime is in greater proportion than about two to one of the oxide, and to the corresponding equivalents of the other substances mentioned, or when the lime has not been prepared in a proper manner, the compound is not safe, and very likely to prove injurious to the skin and hair-bulbs, and, perhaps, to act as a depilatory. The effects of these lead-dyes arise partly in the way previously described, and partly by direct chemical action between the sulphur of the hair and the lead which they contain, sulphuret of lead being formed in the surfacial portion of the hair. It is on the last that their more immediate effect depends. If there be no sulphur in the hair, they will not darken it. After the necessary period of contact, they should be gently but thoroughly removed from the hair and skin by rubbing them off with the fingers, and by the use of the hair-brush, the head being then washed clean with tepid water. Should the tint imparted by them not be deep enough, or be too fiery, it may be darkened and turned on the brown or black by moistening the hair the next day with a very weak solution of sulphuret of potassium or of hydrosulphuret of ammonia.

None of the compounds of lead stain the skin, an advantage which has led to a preference being given to them by many persons who are clumsy manipulators, and to the more extensive use of them than of other hair-dyes.

The salts of silver above referred to are more rapid in their action as hair-dyes than those containing lead. It is only necessary to wash the hair quite clean and free from grease, then to moisten it with a weak solution of one of them; and lastly, to expose it to the light, to effect the object in view. Sunlight will fully darken it in a few minutes; but in diffused daylight it will take two or three hours, or longer, to acquire its deepest shade. To avoid this delay and inconvenience, the common practice is, a few minutes after applying the silver solution, to moisten or wet the hair with a solution of sulphuret of potassium, or of hydrosulphuret of ammonia. The effect is immediate, and the full depth of shade which a silver-solution of the strength employed is capable of imparting, is at once produced. A few minutes later and the hair and skin may be rinsed with tepid water, gently wiped dry, and the hair finally adjusted with the comb. The ease of its application, its rapid action, and the satisfactory nature of the effect produced, all tend to render a solution of nitrate of silver the favorite hair-dye of those who have sufficient skill and steadiness of hand to use it properly.

It will be useful here to inform the inexperienced reader, that all solutions and compounds which contain nitrate of silver, stain the skin as well as the hair, if they be allowed to touch it. These stains may be removed, when quite recent, by rubbing them with a piece of rag or sponge wetted with a weak solution of potas-

sium,* of hydrosulphuret of ammonia,† or of iodide of potassium; but as this is attended with some trouble and inconvenience, the best way is to avoid the necessity of having recourse to it. The hair-dressers commonly adopt the plan of smearing hard pomatum or cosmetique over the skin immediately surrounding the hair to be operated upon, in order to protect it from the dye. By very skilful manipulation, and the observance of due precautions, the hair may be thoroughly moistened with the silver-solution, without touching the adjacent skin; but this can only be done, when the hair of the head is under treatment, by a second party.

Pyrogallie acid, the juice of walnuts, and some other substances and preparations hereafter noticed as hair-dyes, also stain the skin, though less intensely and permanently than the salts of silver.

In reference to the tone and shades of color given by the substances commonly employed to dye the hair, it may be useful to state, that the shades given by preparations of *iron* and *bismuth* range from dark brown to black; those given by the salts of silver from a fine natural chestnut to deep brown and black, all of which are rich and unexceptionable; those given by pyrogallie acid, rich browns of various shades; as are also those imparted by walnut-juice, though less rich and warm. The shades given by lead vary from reddish brown and auburn to black; and when pale or when the dye has been badly applied or compounded, are generally of a sandy reddish hue, often far from agreeable. However this tendency of the lead-dyes has recently led to their extensive use to impart that peculiar tint to the light hair of ladies and children which is now so fashionable. Other substances, hereafter referred to, are, however, preferable, as imparting a more pleasing hue.

The reddish tint produced by lead, as already hinted, may be generally darkened into a brown, more or less rich, by subsequently moistening the hair with a weak solution of either sulphuret of potassium or of hydrosulphuret of ammonia.

The favorite compounds for external use in baldness, and, perhaps, the most convenient and best, are such as owe their stimulating quality to cantharides or Spanish flies, or to their active principle, cantharidine. This application of these drugs has received the sanction of the highest medical authorities, both in Europe and America, including even Dupuytren himself. The leading professional hair-restorers now rely almost exclusively on cantharides, and all the more celebrated advertised nostrums for restoring the hair contain it as their active ingredient.

Oils and pomades very strongly impregnated with the essential oils of garden-thyme (*origanum*) and rosemary, and lotions or

* † That which has been already used to strike the color will do for this purpose.

liniments containing ammonia with a like addition of these essential oils, probably come next in the frequency of their use as popular restoratives of the hair in actual and incipient baldness.

The beauty depends chiefly on all its several features being pleasingly moulded and in "perfect keeping" with each other. Without this proportion between the individual features, the most delicate complexion, the brightest eyes, the softest cheeks, the finely-moulded mouth, and the ruddiest lips, may fail to charm, and, by contrast, may even disfigure where they should adorn. It is this excellence of proportion that constitutes one of the chief elements of personal beauty.

The eyes, of all the features, stand pre-eminent for their beauty and ever-varying powers of expression, and for being the organs of the most exalted, delicate, and useful of the senses. It is they alone, that "reveal the external forms of beauty to the mind, and enable it to perceive them, even at a distance, with the lightning speed of light. It is they alone that clothe the whole creation with the magic charms of color, and fix on every object the identity of figure. It is the eyes alone," or chiefly, that reveal the emotions of the mind to others, and that clothe the features with the language of the soul. "Melting with pity, or glowing with hope, or redolent with love, benevolence, desire, or emulation, they impart to the countenance those vital fascinations which are the peculiar attributes of man." "And when the mind is subdued by fear, anxiety, or shame, or overwhelmed with sorrow or despair, the eyes, like faithful chroniclers, still tell the truthful story of the mental disquietude. And hatred, anger, envy, pride, and jealousy, ambition, avarice, discontent, and all the varied passions" and emotions that "torment, excite, or depress the human soul, and find a resting place in the human breast," obtain expression in the eyes. "At one moment the instruments of receiving and imparting pleasure, at another the willing or passive instruments of pain, their influences and changes are as varied and boundless as the empire of thought itself." "Though their silent expressions the mind reveals its workings to the external world in signs more rapid and as palpable as those uttered by the tongue." It is "the eyes alone that stamp the face with the outward symbol of animation and vitality," and which endue it with the visible "sanctity of reason." The eye is, indeed, the chief and most "speaking" feature of the face, and the one on whose excellence, more than any other, its beauty depends.

Theories have been based on even the peculiar color of the eyes. Thus, it is said, that dark blue eyes are found chiefly in persons of delicate, refined, or effeminate mental character; light blue eyes, and more particularly gray eyes, in the hardy and active; hazel eyes in the masculine, vigorous, and profound; black eyes in those whose energy is of a desultory or remittent character, and who exhibit fickleness in pursuits and affection; greenish

eyes, it is asserted, have the same general meaning as gray eyes, with the addition of selfishness, or a sinister disposition. These statements, however, though based on some general truths, and supported by popular opinion, are liable to so many exceptions as to be unreliable, and valueless, in their individual applications.

Shakespeare is said to have had hazel eyes; Swift, blue eyes; Milton, Scott, and Byron, gray eyes. Wellington and Napoleon are also said to have had gray eyes.

A beautiful eye is one that is full, clear, and brilliant, appropriate in color to the complexion, and in form, to the features, and of which the connected parts—the eyelids, eyelashes, and eyebrows, which, with it, in a general view of the subject, collectively form the external eye—are also beautiful, and in keeping with it.

To increase the beauty and expression of the eyes various means are occasionally had recourse to, nearly all of which, except those hereafter mentioned in connection with the eyelashes and eyebrows, are not merely highly objectionable but even dangerous. Thus, some fashionable ladies and actresses, to enhance the clearness and brilliancy of their eyes before appearing in public, are in the habit of exposing them to air slightly impregnated with the vapor of prussic acid. This is done by placing a single drop of the dilute acid at the bottom of an eye-cup or eye-glass, and then holding the cup or glass against the eye for a few seconds, with the head in an inclined position. It has also been asserted, and I believe correctly, that certain ladies of the *demi-monde* rub a very small quantity of belladonna-ointment on the brow over each eye, or moisten the same part with a few drops of tincture of belladonna. This produces dilation of the pupil, and gives that peculiar fulness and an expression of languor to the eyes which, by some, is regarded as exceedingly fascinating. The use of these active medicinals, in this way, must be manifestly injurious; and when frequent, or long continued, or carried to excess, must necessarily result in impaired vision, if not in actual blindness.

The following means of preserving and restoring the sight, which has for some time been going the round of the periodical press, being really based on scientific principles, may be appropriately inserted here :—

For near-sightedness, close the eyes and pass the fingers, very gently, several times across them outward, from the canthus, or corner next the nose, towards the temple. This tends slightly to flatten the corner and lens of the eye, and thus to lengthen or extend the angle of vision. The operation should be repeated several times a day, or at least always after making one's toilet, until short-sightedness is nearly or completely removed.

For long sight, loss of sight by age, weak sight, and generally

for all those defects which require the use of magnifying glasses, gently pass the finger, or napkin, from the outer angle or corner of the eyes inward, above and below the eyeball, towards the nose. This tends slightly to 'round up' the eyes, and thus to preserve or to restore the sight. It should be done every time the eyes are washed, or oftener.

The beauty of the human mouth and lips, the delicacy of their formation and tints, their power of expression, which is only inferior to that of the eyes, and their elevated position as the media, with the palate, tongue, and teeth, by which we communicate our thoughts to others in an audible form, need scarcely be dilated on here. The poet tells us that—

“ The lips of woman out of roses take
 The tints with which they ever stain themselves.
 They are the beautiful lofty shelves
 Where rests the sweetness which the young hours make,
 And which the earnest boy, whom we call Love,
 Will often sip in sorrow or in play.
 Health when it comes doth ruddiness approve,
 But his strong foe soon flatters it away !
 Disease and health for a warm pair of lips,
 Like York and Lancaster, wage active strife;
 One on his banner front the White rose keeps,
 And one the Red; and thus with woman's life,
 Her lips are made a battle-field for those
 Who struggle for the color of a rose.”

A beautiful mouth is one that is moderately small, and has a well-defined and graceful outline; and beautiful lips are gracefully moulded, neither thick nor thin, nor compressed nor lax, and that are endowed with expression, and tinted with the hues of health.

The ladies of Eastern nations commonly heighten the hue and freshness of their lips by means of cosmetics, a practice which in Western Europe is only adopted on the stage, and occasionally by courtezans and ladies of the demi-monde.

Chapped lips most frequently occur in persons with pale, bluish, moist lips, and a languid circulation, who are much exposed to the wind in dry cold weather, or who are continually moving from heated apartments to the external air. East and north-east winds are those that generally produce them. The occasional application of a little cold-cream, lip-salve, spermaceti-ointment, or any other mild unguent, will generally prevent them, and remove them when they have already formed. A still more elegant and effective preventative and remedy is glycerine diluted with about twice its weight of eau-de-rose, or glycerinated lip-salve or balsam.

The moist vesicular eruption of the lips, referred to above, may also generally be prevented by the use of glycerine, or any of the preparations just mentioned. After its accession, the best treatment is to freely dust the affected portion of the lips with violet-

powder, finely powdered starch, prepared chalk, or French chalk or talc reduced to an impalpable powder by scraping or grating it.

The influence which the teeth are capable of exercising on the personal appearance is usually known and admitted.

The teeth have formed especial objects of attention, in connection with the toilet and cosmetic arts, from almost the earliest ages of the world to the present time. History and tradition, and the researches of archæologists among the remains of the prehistoric periods of the nation of the East, show us that even denistry may trace back its origin to a date not very long subsequent to the 'confusion of tongues.'

We are told that the ancient Welsh took particular care of their teeth, and kept them perfectly white by frequently rubbing them with a stick of green hazel and a woollen cloth. To prevent their premature decay, they scrupulously avoided acid liquids, and invariably abstained from all hot food and drink.

In older times, in these realms, the removal of the teeth, or some of them, was occasionally ordered by the way of persecution or punishment. It is said that King John once demanded ten thousand marks from a Jew at Bristol; and, on his refusal, ordered one of his teeth to be drawn every day until he should comply. The Jew lost seven teeth, and then paid the sum so unjustly demanded of him.

Europeans pride themselves on teeth of pearly whiteness; but many Asiatic nations regard them as beautiful only when of a black color. The Chinese, in order to blacken them chew what is popularly called 'betel, or betel-nut,' a common masticatory in the East. The Siamese and the Tonquinese do the same, but to a still greater extent, which renders their teeth as black as ebony, or more so. As the use of the masticatory is generally not commenced until a certain age, the common practice is to stain the teeth of the boys and girls with a strong preparation of it, on the former attaining the age of ten or twelve.

Keeping the lips apart and breathing through the mouth, instead of the nose, and particularly sleeping with the mouth open, are habits which are very prejudicial to the teeth and gums. In this way the mouth forms a trap to catch the dust and gritty particles floating in the atmosphere, which soon mechanically injure the enamel of the teeth by attrition.

On the subject of cleanliness in connection with the teeth and mouth, it may be said that the mouth cannot be too frequently rinsed during the day, and that it should be more particularly so treated after every meal. Pure cold water is the best for the purpose. It not only cleans the teeth and mouth, but exerts a tonic action on the gums, which warm water, or even tepid water, is deficient in. When cold water cannot be tolerated, tepid water may be employed, the temperature being

slightly lowered once every week or ten days, until cold water can be borne. Every one who abhors a foetid breath, rotten teeth, and the toothache, would do well to thoroughly clean his teeth at bedtime, observing to well rinse the mouth with cold water on rising in the morning, and again in the day once, or oftener, as the opportunities occur. With smokers, the use of the tooth-brush the last thing at night is almost obligatory, if they value their teeth, and wish to avoid the unpleasant flavor and sensation which teeth fouled with tobacco-smoke occasion in the mouth on awaking in the morning.

As to tooth-powders or tooth-pastes to be used with the brush, little need be said here, as I shall revert to the subject again. The simplest are the best. Plain camphorated chalk, with or without a little finely powdered pumice-stone or burnt hartshorn, is a popular and excellent tooth-powder. It is capable of exerting sufficient friction under the brush to ensure pearly whiteness of the teeth without injuring the enamel, whilst the camphor in it tends to destroy the animalcula in the secretions of the mouth, whose skeletons or remains constitute, as we shall presently see, the incrustation popularly called "tartar" or "fur." Recently burnt charcoal, in very fine powder, is another popular and excellent tooth-powder which, without injuring the enamel, is sufficiently gritty to clean the teeth and remove the tartar from them, and possesses the advantage of also removing the offensive odor arising from rotten teeth, and from decomposing organic matter. The charcoal of the heavy, hard woods, as *lignum-vitæ*, box-wood, oak, are the best; and these, as to quality, range in the order here given. Still more valuable, as a dentifrice, is areca-nut charcoal, which, besides possessing the properties of the other vegetable charcoals in an eminent degree, has invaluable ones peculiar to itself.

Some dentists, and some persons in imitation of them, in order to whiten the teeth, rub their surfaces with hydrochloric acid, somewhat dilute; but the practice is a most dangerous one, which, by a few repetitions, will sometimes utterly destroy the enamel, and lead to the rapid decay of all the teeth so treated. Should the teeth be much discolored, and ordinary tooth-powder prove ineffective, a little lemon-juice, used with the brush, will generally render them perfectly white. It should only be employed occasionally, and the mouth should be well rinsed with water immediately afterwards. A little of the pulp of an orange, used in the same way, is also very effective and safe as are also ripe strawberries, which may be either rubbed on the teeth with the fingers, or applied with the brush. The last form, perhaps, the very best natural dentifrice known. Besides possessing singular power in whitening and cleansing the teeth, and rapidly removing tartar, they destroy the offensive odor of rotten teeth, and impart an agreeable fragrance to the breath.

The importance of a judicious attention to the teeth, in connection with health, cleanliness, and personal comfort and appearance, cannot be too often alluded to and enforced.

It is no exaggeration to say that, taking the whole community, there are few, very few, who clean their teeth, or even wash their mouths, once a day. With the masses, the operation, if performed at all, is confined to the Sabbath-day, or to holidays. Whilst refined, educated, and cleanly persons, regard the operation of cleaning the teeth as a daily duty, as necessary as washing the face and hands, the dirty and vulgar—the two words are here synonymous—wholly neglect it, and too often even consider it as unnecessary, effeminate, and absurd. The consequences of the careless performance, or the neglect, of this really necessary personal duty, are not long in being developed. Passing over the degradation of the other features, the offensiveness of the breath, often to a degree which renders the individual uncompanionable, and the unfavorable impression which, like other marks of uncleanness, they convey of the taste and habits of their possessor, as the immediate effects of habitually neglected and dirty teeth, let us look at the more distant, but not less certain ones:—

In cases of ordinary toothache, even severe ones, chewing a small piece of really good pellitory will often give relief in a few minutes. Chewing a piece of strong unbleached Jamaica ginger will often do the same, in slight cases. The celebrated John Wesley recommended a “few whiffs” at a pipe containing a little caraway-seed mixed with tobacco, as a simple and ready means of curing the toothache. I can bear testimony to the fact that, in some cases, it succeeds admirably.

Scarcely anything is more disagreeable, and, in marked cases, more disgusting, than foetid breath. It is unpleasant to the person that has it, and it renders him unfit for the society of others. The cause of stinking breath may generally be traced to rotten teeth, diseased stomach, or worms. When the first are the cause, the teeth should be thoroughly cleansed, and then “stopped” in the manner already indicated; or, when this is impracticable, the offending tooth, or teeth, may be removed, and replaced by artificial ones. When this cannot be done, or is inconvenient, the evil may be greatly lessened, by the frequent use of an antiseptic tooth-powder, as arecanut charcoal, or camphorated chalk. Dirty teeth, even when quite sound, always more or less taint the breath. When a foul or a diseased stomach is the cause, mild aperients should be administered; and, if these do not succeed, an emetic may be given scrupulous cleanliness of the teeth being observed, as in the former case. When worms are the cause, worm-medicine, under medical direction, will be necessary.

The Italian ladies, who are regarded by many as the most beautiful in the world, are innocent of the use of corsets, and exhibit surprise at their being so generally worn by the English and French. The beauties of the harems of the Oriental nations do not wear them. "The Turkish ladies," wrote Lady Montague, "express horror at seeing English women so tightly laced;" and travellers tell us that this feeling still exists among the ladies of the East.

Lady Duff-Gordon, in her work just published, in speaking of the charms of Oriental females, remarks :--"If I get hold of a handsome fellaheen here, I will get her photographed, to show you in Europe what a woman's breast can be, for I never knew it before I came here. It is the the most beautiful thing in the world, and gloriously independent of stays or any support.

The human hand, regarded either with reference to its ingenious construction and usefulness, or to its beauty, stands alone, in its superlative excellence, in the whole animal world. In no other species of animal is the hand so wonderfully formed, and so perfectly developed, as in man.

To preserve the delicacy and beauty of the hands, some little care, and more than that which is ordinarily bestowed on them, is required. Foremost in consideration must be the subject of cleanliness. Dirty and coarse hands are no less marks of slothfulness and low breeding, than clean and delicate hands are of refinement and gentility. To promote the softness and whiteness of the skin, mild emollient soaps, or those abounding in oil or fat, should alone be adopted for common use; by which means the tendency to contract chaps and chilblains, and roughness from drying winds, will also be lessened. The coarse, strong kinds of soap, those abounding in alkali, should, for a reason, be rejected, as they tend to render the skin rough, dry and brittle. The immersion of the hands in alkaline lyes, or in strongly acidulated water, has a similar effect, which increases with the temperature of the liquid. Rain-water, or soft-water, is the best natural water for washing the hands, as it cleanses them more rapidly and completely than ordinary hard water, and with the use of less soap. It may be advantageously used tepid, or even warm; but hot water should be avoided. Distilled water, when obtainable, is preferable to even rain-water. In the absence of these, water that has been boiled and allowed to settle and cool, may be employed. With hard water the hands are cleansed with difficulty; and though it may be readily softened by the addition of a little soda, such an addition tends to make the skin of a delicate hand somewhat hard and rough. If hard water must be used to wash with, the only harmless substance that can be conveniently added to it, is a little good powdered borax. This will also cause it to exert a genial action on the skin. Oat meal and warm water used every night and morn-

ing as a wash will whiten and soften the roughest and dark hands.

Coarse, red, dark-skinned hands, may be whitened by the occasional use of a few grains of chloride of lime, with warm water, in the manner mentioned above.

Roughness of the hands, induced by exposure to cold and drying winds, may, in general, be removed by the use of a little powdered pumice-stone, with the soap in washing them. The subsequent application, particularly at night, of the above lotions, or of two or three drops of almond-oil or olive-oil, well rubbed in, will usually effect the object completely.

The hands may be preserved dry for delicate work, by rubbing a little club-moss (*lycopodium*) in fine powder, over them. So repellent is this substance of moisture, that, if a small quantity of it be sprinkled on the surface of a basin of water, the hand, by a little adroitness, may be plunged to the bottom of the basin without becoming wet.

Excessive moistness or perspiration of the hands, without obvious cause, is generally indicative of debility, or disordered stomach, and requires corresponding treatment. Frequently washing the hands in moderately cold water often proves a local remedy for the inconvenience. The addition of a few grains of alum, sal ammoniac, or sulphate of zinc, or of a tea-spoonful of vinegar, to the water, greatly increases its efficacy. Extremely delicate and susceptible persons cannot always bear the excessive perspiration of their hands to be thus suddenly lessened; and therefore some discretion should be exercised by them in their attempts to check it.

The finger-nails require special attention if we desire to preserve them in their highest condition of beauty and usefulness. To keep them clean, the nail-brush, and soap-and-water, should be used once or oftener daily, as circumstances demand. Once a day, at least, on wiping the hands after washing them, and whilst they are still soft from the action of the water, the free edge of the scarf-skin which, if not attended to, is apt to grow upward over the nails, should be gently loosened and pressed back, in a neatly rounded form, by which the occurrence of cracks and sores about their roots (agnails, nail-springs, &c.) will be prevented, and a graceful oval form, ending in a crescent-like space of white, will be ensured. The skin, as a rule, should never be cut, pared, picked, or torn off, as is commonly done; and the less it is meddled with, otherwise than in the way just mentioned, the better. The ends or points of the nails should be pared once every week or ten days, according to the rapidity of their growth, which somewhat varies with the season of the year and the habit of the individual. This is best done with a sharp penknife or nail-knife. Scissors are less convenient for the

purpose, and have the disadvantage of straining and distorting the nails during the process.

The length and shape of the nails, both for beauty and use, should exactly correspond with the tips of the fingers. Nails extending beyond the ends of the fingers are vulgar, claw-like, and inconvenient; whilst if shorter, particularly much shorter than the fingers, they are unsightly and of little use, and cause the tips of the fingers to become thick and clumsy. Biting the nails should be avoided as a dirty and disagreeable habit, and one utterly destructive to their beauty, strength, and usefulness.

To remove stains and discolorations of the nails, a little lemon-juice, or vinegar-and-water is the best application. Should this fail, a few grains of salt of sorrel, oxalic acid, or chloride of lime, each diluted with warm water, may be applied, care being taken to thoroughly rinse the hands in clean water, without soap, afterwards. Occasionally a little pumice-stone, in impalpable powder, or powdered cuttle-fish bone, putty-powder (polisher's peroxide of tin), may be used along with water and a piece of wash-leather, flannel, or the nail-brush for the same purpose. The frequent use of any of these substances is, however, injurious to the healthy growth, strength, and permanent beauty of the nails. The common practice of scraping the surface of the nails cannot be too strongly censured, as it causes them to become weak and distorted. Blows on the nails, and, indeed, violence to them in any form, also distorts and marks them.

The ladies of Oriental nations commonly dye the nails; and amongst many savage tribes the same practice is adopted, and is not confined to the gentler sex. Among Western Europeans, and Americans, white and regularly formed nails are alone esteemed.

Chapped hands are common among persons with a languid circulation who are continually "dabbling" in water during cold weather, and particularly among those with a scrofulous taint, who, without the last, expose their ungloved hands to bleak cold winds. The best preventatives, as well as remedies, are the use of warm gloves out of doors, and the application, night and morning, of a little glycerine, diluted with twice or thrice its weight of water, or a little cold-cream, spermaceti-cerate, salad-oil, or any other simple unguent or oil, which should be well rubbed in, the superfluous portion being removed with a towel. This treatment will not only preserve the hands from the effects of cold and damp, but also tend to render them soft and white. Deep chaps which have degenerated into sores should be kept constantly covered with a piece of lint wetted with glycerine, or spread with spermaceti-ointment, the part being at the same time carefully preserved from dirt, cold, and wind. It is said that a once favourite actress, Madame V——, celebrated for the beauty of her hands even when "in the sere and yellow leaf," covered them nightly with the flare of a calf or lamb

with the fat attached, over which was drawn a glove or mitten of soft leather. The application of a little glycerine or fatty matter, in the way just indicated, would have been equally effective.

Warts—"verrucae" of surgeons—like chilblains, are too well known to require description. They chiefly attack the hands, and particularly the fingers; but sometimes occur in other portions of the body. They may be removed by rubbing or moistening their extremities every day, or every other day, with lunar caustic, (fused nitrate of silver), nitric acid, concentrated acetic acid, or aromatic vinegar, as directed under 'corns'; care being taken not to wash the hands for some hours after. The first is an extremely convenient and manageable substance, from not being liable to drop or spread; but it produces a black stain, which remains till the cauterised surface peels off. The second produces a yellow stain, in depth proportioned to the strength of the acid employed. This also wears off after the lapse of a few days. The others scarcely discolor the skin. Erasmus Wilson mentions the case of a gentleman who removed an entire crop of warts from his knuckles and fingers, by subjecting them to a succession of sparks from the brass knob of an electrical machine. German practitioners are in the habit of recommending the internal use of carbonate of magnesia in cases of warts; and Dr. Peez, of Wiesbaden, confirms their opinion of "its rapid curative agency," either alone, or when accompanied with any of the ordinary modes of local treatment.

Warts often disappear under the influence of the imagination, and strong mental excitement, in a very singular way. Thus, among the ignorant and superstitious amulets and incantations, and 'touches' with substances that cannot possibly exert the slightest chemical, dynamical, or physiological action on the part, supported by a lively faith, are not infrequently sufficient to cause their disappearance. The sudden confusion and embarrassment into which a sensitive and nervous person is thrown, by being unexpectedly assused of something of which he is entirely innocent, will also sometimes produced by agencies that are apparently insufficient for the purpose. Thus, blowing on the backs of the hands, or on the face, with a pair of bellows, has been known occasionally to be followed by a crop of warts on the part.

To preserve the feet in a thoroughly healthy and comfortable state, the first object of attention should be cleanliness—thorough cleanliness. For this purpose they should be frequently soaked and well washed in warm or tepid water, good yellow soap being freely used to remove the dirt and perspiration which accumulate about them. This should be done, if possible, every day in summer, every other day in spring and

autumn, and twice a week in winter. The appropriate time for the operation is at night, before retiring to rest. Once a week, after soaking, washing, and drying them with the towel, but whilst still soft from the action of the water, the feet should be carefully examined. loose portions of skin removed by friction with a dry part of the towel or with the fingers, and callosities or indurations reduced by the finger-nails, or by rubbing them with a piece of pumice-stone. About once a fortnight, on a similar occasion, the nails of the toes should be pared with a sharp pen-knife, to prevent them becoming inconveniently long or growing into the flesh.



THE ANCIENT SACRED
EGYPTIAN, ROMAN AND OTHER
HIDDEN SECRETS
OF
CLEOPATRA'S WONDERFUL BEAUTY,

TO WHICH IS ADDED

ALL THE BEST MODERN SECRETS TO MAKE THE
HUMAN FACE AND FORM BEAUTIFUL.

WHICH THE COMBINED INTELLIGENCE OF MANKIND
HAVE DISCOVERED.

We have been fortunate enough to secure through a friend residing in Alexandria, Egypt, some of the most Valuable Recipes and Secrets for Attaining and Preserving Extraordinary Beauty of Face and Form. We believe them to be safe and reliable to use, and therefore publish them for the especial benefit of those desiring to Improve the General Beauty of the Human Body in all its Features and Combinations.

FRECKLES are of two kinds. Those occasioned by exposure to the sunshine, and consequently evanescent, are denominated "summer freckles" : those which are constitutional and permanent are called "coll freckles." With regard to the latter it is impossible to give any advice which will be of value. The result from causes not to be affected by mere external applications. Summer freckles are not so difficult to deal with, and with a little care the skin may be kept free from this cause of disfigurement by using either of the following recipes:—


1.—Scrape horseradish into a cup of sour milk, let it stand twelve hours, strain, and apply two or three times a day.

2.—Into half a pint of milk squeeze the juice of a lemon, with a spoonful of brandy, and boil, skimming well; add a drachm of rock-alum.

Foul Breath, unless caused by neglected teeth, indicates a deranged state of the system. When it is occasioned by the teeth, or other local cause, use a gargle, consisting of a spoonful of solution of chloride of lime in half a tumbler of water.

Gentlemen Smoking or Chewing—surely tainting the breath thereby—will be glad to know that the common parsley has a peculiar effect in removing the disagreeable order of tobacco.

Care of the Hands.—Should you wish to make your hands white and delicate, you might wash them in hot milk and water for a day or two. On retiring to rest, rub them well over with palm oil, and put on a pair of woolen gloves. The hands should be thoroughly washed with hot water and soap the next morning and a pair of soft leather gloves worn during the day; they should be frequently rubbed together to promote circulation. Sun-burnt hands may be washed in lime-water or lemon-juice. Should they be severely freckled, the following may be used to advantage: Take one pint of distilled water, sal ammoniac, half-drachm, oxymuriate of quicksilver, four grains, divide the two last in spirit, and gradually add the water to them; add another half pint of water, mix well together, and it is ready for use. It should be applied as often as desirable, with a piece of soft sponge; if rose-water is substituted for distilled water, the effect is pleasanter.

Washes for the Face.—We do not approve of face-washes; but as some ladies will use them, we recommend the following as harmless: Dampen the face with glycerine, tempered with rose-water, then powder with the finest magnesia. It imparts a charming whiteness.  Less harmless, but more frequently used, is to procure five cents of bismuth, of flake white, and of powdered chalk. Mix with five cents of rose-water. Great care must be taken to wash off this preparation before retiring to rest, as the bismuth is of a poisonous nature.

To Keep the Hair Dark.—Dissolve half an ounce nitrate of silver in two ounces acqua ammonia. Boil three half-pints water, when cool pour the water into the ammonia. This preparation must be carefully applied to the hair with a tooth-brush. If it should touch the skin, wash it off immediately with warm water and soap. This preparation must always be kept bottled, and the bottles placed in covered boxes, as the action of the light on the liquid tends to destroy its coloring properties.

Violet Powder.—Wheat starch, 12 pounds; powdered orris, 2 pounds; mix together, and add ottar of lemon, one-half ounce; ottars of bergamot and cloves, each two drahms.

French White for the Face.—Pure oxide or subnitrate of bismuth in powder. This pigment darkens in atmospheres containing sulphide of hydrogen, one ounce triturated with four ounces of orange-flower water, make liquid white such as used by theatricals.

Carminé Rouge.—Finely bolted, take four ounces; carminé, two drachms; mix together with a little warm water and dilute solution of gum tragacanth. For lighter shades, the proportion of carminé must be diminished. For commoner pastes, rose-pink replaces the carminé as coloring matter. It may be made into a pomade.

Pearl Powder.—Precipitated chalk, finely bolted and perfumed. The French add oxides of zinc and bismuth each one pound of chalk.

Cold Cream.—Take one ounce avoirdupois, each pure white wax and spermaceti, and $\frac{1}{4}$ Imperial pint of almonds; melt, pour the mixture into a marble or wedge wood-ware mortar, or a porcelain basin, which has been heated by being emersed for some time in boiling water; add very gradually of rose-water, four fluid ounces, and assiduously stir the mixture until an emulsion is formed, and afterwards until the whole is nearly cold. Lastly, put it into porcelain or earthenware pots for use.

Fine Camphor Ice.—Melt together over a water-bath white wax and spermaceti, each one ounce, camphor, two ounces, in sweet almond oil one pound; next triturate, and when the mixture has been rubbed into a thick paste, allow one pound of rose-water to flow in slowly. Then perfume with ottar of rose-mary, one drachm.

Lotion to Remove Freckles. Dissolve three grains borax in five drachms each of rose-water, and orange-flower water; a very simple and harmless remedy is equal in parts of pure glycerine and rose-water, applied every night and allowed to dry on the face.

Shaving Paste.—Take of white soft soap four ounces; honey-

soap, (finely sliced) two ounces, olive-oil, one ounce; water one or two table-spoonfuls; carbonate of soda, two drachms, melt them together and form a paste, adding a little proof spirits and scent at will. Some persons melt with the soap about one drachm of spermaceti.

White Lip Salve.—Take half-pound spermaceti ointment, liquify it by the heat of warm water, and stir in one-half drachm neroli or essence de petit-grain. In a few minutes pour off the clear portion from the dregs (if any), and add twenty drops of oil of rose. Lastly, before it cools, pour it into jars.

Wild Rose Curling Fluid. Take two drachms avoirdupois dry salt of tartar (carbonate of potassa), powdered cochineal, half drachm; liquor of ammonia and spirit de rose, each one fluid drachm; glycerine, one-fourth ounce; rectified spirit, one and one-half Imperial fluid ounces, distilled water, eighteen ounces; digest, with agitation, for a week, and then decant or filter. The hair moistened with it, and then loosely adjusted. The effect occurs as it dries.

Fine Shampoo Liquor.—This excellent wash for the hair is made by dissolving half-an-ounce of carbonate of ammonia, and one ounce of borax in one quart of water, and adding thereto two ounces glycerine, three quarts New England rum, and one quart bay-rum. The hair, having been moistened with this liquor is to be shampooed with the hand until a slight lather is formed and the latter being then washed out with clear water, leaves the head clean and the hair moist and glossy.

To Clear the Complexion, or Reduce the Size.—It is essential that the blood should be cleansed. Take a teaspoonful powdered charcoal, mixed with water or honey, for three successive nights, then use a seidlitz powder to remove it from the system. It acts splendidly upon the system and purifies the blood, but under no circumstances must the physic be neglected to carry the chemical from the system; if not, ill effects are certain to follow.

To Cure and Refine a Stippled Skin.—A small dose of taraxacum every other night will most materially aid in refining the skin. It is a month or six weeks job to accomplish the desired result. You must also wear a mask of quilted cotton, wet in cold water over night. Do not get discouraged, for it is worth the trouble.

To Have Elegant Hair.—Every girl should have thick, magnificent hair. It is essential to clip the ends of the hair once a month after the child is four years of age. Ammonia and warm water is an excellent wash for the hair and scalp, and gives life and vigor to it when all other articles fail.

Curly Hair.—Two pounds of common soap, cut small into three pints of spirits of wine, and melt together over a slow fire, stirring with a clean piece of wood; add when taken off essence of ambergris, citron and neroli about a quarter of an ounce of each.

Growth of the Hair.—One of the most powerful stimulants for the growth of the hair is the following:—Take a quarter of an ounce of the chippings of alkanet root, tie in a scrap of coarse muslin, and suspend it in a jar containing eight ounces of sweet oil, for a week, covering from the dust. Add to this, sixty drops tincture of cantharides, ten drops oil of rose, sixty drops of neroli, also sixty drops oil of lemon. Let this stand twenty days, closely corked, and you will have one of the greatest Hair Invigorator's and Hair Grower that this world has ever produced.

Lola Montez Hair Coloring.—This celebrated woman published the following, and claimed that it was as harmless as any preparation that would really color the hair: Ten grains of gallic acid, one ounce of acetic acid, one ounce of tincture of sesgwichloride of iron. Dissolve the gallic acid in the sesgwichloride, and add the acetic acid. Wash the hair with soap and water, when dried, apply the dye by dipping a fine comb in it and drawing through the hair so as to color the roots thoroughly. Let it dry; then oil and brush well.

Superfluous Hair can be removed by using diluted acids very carefully and persistently as the hair appears. The juice of the milk thistle mixed with oil is highly recommended from preventing the hair from growing too low on the forehead or neck.

To Improve the Eye Lashes.—Many people speak highly of this secret. Trim the tiny points slightly, and anoint with this salve:—Two drachms of ointment of nitric oxida of mercury and one drachm of lard. Mix the lard and ointment well, and anoint the edges of the eyelids night and morning, after each time with milk and water. This will restore the lashes when all other remedies fail. It is not generally known in this country, and is a valuable secret.

To Have White and Beautiful Teeth.—An article known as "The Queen's Teeth Preserver," is made as follows:—One ounce of coarsely powdered Peruvian Bark, mixed in half pint of brandy for twelve days. Gargle the mouth (teeth and gums) with a teaspoonful of this preserver, diluted with an equal quantity of rose water. Always wash off the teeth after each meal with water. Also, twice a day wash the teeth with the ashes of burned bread—bread burned to ashes.

For Decayed Teeth.—There is nothing better than two scruples of myrrh in fine powder, one scruple of juniper gum, and ten grains of alum, mixed in honey, and apply often to them.

Toothache.—Take equal parts of camphor, sulphuric ether, ammonia, laudanum, tincture of cayenne, and one-eight part oil cloves. Mix well together. Saturate with the liquid a small piece of cotton, and apply to the cavity of the diseased tooth, and the pain will cease immediately. Put up in long drachm bottles. Retail at 25 cents. This is a very saleable preparation, and affords a large profit to the manufacturer.

Cresigas Lotion for the skin and complexion, a great secret. Distil two handfuls jessamine flowers in a quart of rose water and quart orange water. Strain through porous paper and add a scruple of musk and a scruple of ambergris. Bottle and label. Splendid wash for the skin.

Premium Tooth Powder.—Six ounces prepared chalk, one-half ounce cassia powder, one ounce orris. Mix well. Put in small pots and label.

Hair Restorative.—Four drachms oxide bismuth, four drachms spermaceti, four ounces pure hog's lard. The lard and spermaceti should be melted together. When nearly cool, stir in the bismuth and perfume. Put in pots and label. Prevents the hair from turning gray, restores gray hair.

Toilet Powder.—One pound white starch, four ounces oxide bismuth. Mix, boil and label.

Pimpernel Kalydor for the skin and complexion.—Steep pimpernel in pure rain water for three days. Bottle and label. Renders the skin clear and white.

Hair Invigorator.—Quart bay rum, pint alcohol, one ounce castor oil, one ounce tincture cantharides, pint sweet oil. Bottle and label.

Bandoline for adjusting the hair.—Boil a tablespoonful of linseed oil in half-pint water for five minutes. Perfume, put in pots and label.

Balm of Gilead.—Opodeldoc, spirits of wine, sal ammoniac, equal parts of each. Shake. Bottle and label. Cures neuralgia, pains, aches, etc. Apply as a lotion.

To Write Secret Letters.—Put five cents' worth citrate of pottassa in an ounce vial of clear cold water. This forms an invisible fluid. Let it dissolve, and you can use on paper of any color. Use a goose-quill in writing. When you wish the writing to become visible, hold it to a red-hot stove.

Stimulators for Bald Heads and Bare Faces.—Tincture hartshorn, one ounce; borax, one-half ounce; alcohol, one pint; tincture cantharides, two drachms. Graham's.—Cologne, two ounces; liquid hartshorn, one drachm; tincture cantharides, two drachms; oil rosemary, twelve drops; oil nutmeg, twelve drops, oil lavender, twelve drops.

Turkish Rouge.—Take half pint of alcohol and one ounce of alkanet; macerate ten days and pour off the liquid, which should be bottled. This is the simplest and one of the best articles of the kind.

CAUTION.—White lead, and all cosmetic powders containing it should never be applied to the skin, as it is the most dangerous article that could be used.

Mouth Pastiles, for Perfuming the Breath.—Extract of licorice, three ounces; oil of cloves, one and a-half drachms; oil of cinnamon, fifteen drops. Mix, and divide into one-grain pills, and silver them.

2. Catechu, seven drachms; orris powder, forty grains, sugar, three ounces; oil of rosemary, (or of clove, peppermint, or cinnamon). four drops. Mix, and roll flat on an oiled marble slab, and cut into very small lozenges.

Hair Restorative.—A tea made by pouring one pint of boiling water on two tablespoonfuls of dried rosemary leaves, with a wineglassful of rum added, is excellent.

Pimples.—These depend upon some derangement of the digestive and other internal organs.—Take of tincture of cardamons one drachm; ipecachuana wine, fifteen drops; flour of sulphur, as much as will lie on a quarter dollar; mix the whole with a glass of ginger or elder wine, and take at bedtime; repeat it every second or third night, and at the same time, pay attention to the bowels.

Breath, Offensive.—The order of the breath, is a pretty correct index of the state of the body. When tainted, it is not so uncommonly from decayed teeth, or from a morbid secretion of the tonsils; but more frequently, in children especially, it is indicative of disordered stomach and loaded bowels. *Treatment.*—Rinse the mouth out two or three times a day with a weak solution of soda or chloride of lime. *Or:*—Take half a tumbler-full of camomile tea on rising every morning.

Vinegar Rouge.—Cochineal, three drachms; carmine lake, three drachms; alcohol, six drachms; mix, and then put into one pint of vinegar, perfumed with lavender; let it stand a fortnight, then strain for use.

Pearl Water for the Complexion.—Castile soap, one pound; water, one gallon. Dissolve, then add alcohol, one quart; oil of rosemary and oil of lavender, each two drachms. Mix well.

Spanish Vermillion for the Toilet.—Take an alkine solution of bastard saffron, and precipitate the color with lemon juice; mix the precipitate with a sufficient quantity of finely powdered French chalk and lemon juice, then add a little perfume.

To Remove Freckles and Tan.—Tincture of benzoin, one pint; tincture tolu, one half pint; oil rosemary, one-half ounce. Put one teaspoonful of the above mixture in one-quarter pint of water, and then with a towel wash the face night and morning.

Feuchtwanger's Tooth Paste.—Powdered myrrh, two ounces burned alum, one ounces; cream tarter, one ounce; cuttle-fish bone, four ounces; drop lake, two ounces; honey, half a gallon. Mix.

Fine Tooth Powder.—Powdered orris root, one ounce; peruvian bark, one ounce; prepared chalk, one ounce; myrrh, one-half ounce.

Bald Heads.—A most valuable remedy for promoting the growth of the hair, is an application once or twice a day, of wild indigo and alcohol. Take four ounces of wild indigo, and steep it about a week or ten days in a pint of alcohol, and a pint of hot water, when it will be ready for use. The head must be thoroughly washed with the liquid, morning and evening, application being made a sponge or soft brush. Another excellent preparation is composed of three ounces of castor oil, with just enough alcohol to cut the oil, to which add twenty drops tincture of cantharides, and perfume to suit. This not only softens and imparts a gloss to the hair, but also invigorates and strengthens the roots of the hair.

Dry Cough.—Take of powdered gum-arabic half an ounce; liquorice-juice half an ounce. Dissolve the gum first in warm water, squeeze in the juice of a lemon, then add of paregoric two drachms; syrup of squills one drachm. Cork all in a bottle, and shake well. Take one teaspoonful when the cough is troublesome.

Black Silk Reviver.—Boil logwood in water half an hour, then simmer the silk half an hour, take it out and put into the dye a little blue vitriol, or green copperas; cool it and simmer the silk for half an hour. Or, boil a handful of fig leaves in two quarts of water until it is reduced to one pint squeeze the leaves, and bottle for use. When wanted sponge the silk with it.

To Clean Old Black Silk.—Grate two potatoes into a quart of water; let it stand to settle, and then drain it off clear. Lay a breath of the silk—from which you have wiped off all the dust with a flannel rag—outside upward on a clean cloth spread over an ironing blanket. Sponge it across the breath well; fold it up, taking care to keep the wetted side upward. Do all the breaths, laying them each aside; then iron them with a hot iron, having a thin piece of linen, or old handkerchief, spread over the silk under the iron; this will prevent the silk from shining. Chloroform will cleanse the finest silks, and remove spots without injury to the fabric.

To Renovate Black Silk.—Two ounces soap bark (to be had at any drug store) soaked over night in one quart of rain-water. Pour off the water from the bark in the morning and sponge the silk thoroughly on both sides, and hang smoothly on a clothes-horse to dry. Do not iron. Old and soiled black silks have been made to look somewhere approaching the newness and more than respectable by this process.

Excellent Hair Wash.—Take one ounce of borax, half an ounce of camphor, powder these ingredients very fine and dissolve them in one quart boiling water; when cool the solution will be ready for use; damp the hair frequently. This wash effectually cleanses, beautifies and strengthens the hair, preserves the color and prevent early baldness. The camphor will form into lumps after being dissolved, but the water will be sufficiently impregnated.

To Remove Offensive Breath.—For this purpose almost the only substance that should be admitted at the toilet is the concentrated solution of chloride of soda. From six to ten drops of it in a wineglassful of spring water, taken immediately after the operations of the morning are completed.

In some cases, the odor arising from carious teeth is combined with that of the stomach. If the mouth be well rinsed with a teaspoonful of the solution of the chloride in a tumbler of water, the bad order of the teeth will be removed.

Sore and Weak Eyes.—Sulphate of zinc three grains; tincture of opium ten drops, water two ounces. To be applied three or four times a day.

Another.—Dissolve five grains acetate of morphia, ten grains sugar of lead, and six grains sulphate of zinc, in five ounces rose-water. Bathe the eyes freely three times a day. For Scrofulous Sore Eyes, take blue violets, dig them up, top and root, wash clean, dry them, and make a tea. Drink several times a day, wetting the eyes each time, and it will soon effect a cure.

Bunions.—May be checked in their early development by binding the joint with adhesive plaster, and keeping it on as long as any uneasiness is felt. The bandaging should be perfect, and it might be well to extend it round the foot. An inflamed bunion should be poulticed, and larger shoes be worn. Iodine twelve grains, lard or spermaceti ointment half an ounce, makes a capital ointment for bunions. It should be rubbed on gently twice or three times a day.

To Cure Baldness.—Colonge water, two ounces; tincture of cantharides two drachms; oil of lavender or rosemary, of each ten drops. These applications must be used twice a day for three or four weeks, but if the scalp becomes sore, they must be discontinued for a time, or used at longer intervals.

When the hair falls off from diminished action of the scalp, preparations of cantharides are excellent. The following will cause the hair to grow faster than any other preparation; beef marrow soaked in several waters, melted and strained, half a pound; tincture cantharides, (made by soaking for a week one drachm of powdered cantharides in one ounce of proof spirit). one ounce; oil of bergamot twelve drops.

Balm of Beauty.—Pure soft water, one quart; pulverized Castile soap, four ounce; emulsion of bitter almonds, six ounces; rose and orange flower water, of each, eight ounces; tincture of benzoin, two drachms; borax, one drachm; add five grains bichloride of mercury to every eight ounces of the mixture. To use, apply on a cotton or linen cloth to the face, etc.

Ammonical Pomatum.—For promoting the growth of the hair. Take almond oil, quarter of a pound; white wax, half an ounce; clarified lard, three ounces; liquid ammonia, a quarter fluid ounce; ottar of lavender, and cloves, of each one drachm. Place the oil, wax and lard in a jar, which, set in boiling water; when the wax is melted, allow the grease to cool till nearly ready to set, then stir in the ammonia and the perfume, and put into small jars for use. Never use a hard brush, nor comb the hair too much. Apply the pomade at night only.

The Hair.—Vinegar and water forms a good wash for the roots of the hair; a solution of ammonia is often used with good effect for the same purpose. For removing scurf, glycerine diluted with a little rose-water will be found of service. Any preparation of rosemary forms an agreeable and highly cleansing wash. The yolk of an egg, beaten up in warm water, is a most nutritious applications to the scalp. A very good one is made in this way: Take an ounce of powdered borax and a small piece of camphor, and dissolve in a quart of boiling water; the hair must afterwards be washed in warm water. Many heads of hair require nothing more in the way of wash than soap and water. The follow receipt will strengthening the hair and prevent its falling off:—"Vinegar of cantharides, half an ounce; eau-de-cologne, one ounce; rose water, one ounce." The scalp should be brushed briskly until it becomes red, and the lotion should then be applied to the roots of the hair twice a day.

Liquid Rouge for the Complexion.—Four ounces of alcohol two ounces of water, twenty grains of carmine; twenty grains of ammonia; six grains oxalic acid; six grains of alum; mix.

Complexion Pomotum.—Mutton grease one pound; oxide of bismuth, four ounces; powdered French chalk, two ounces; mix.

Certain cure for Eruptions, Pimples, etc.—Having in numerous instances seen the good effects of the following prescription, I can certify to its perfect remedy. Dilute corrosive sub-

limate with the oil of almonds, apply it to the face occasionally and in a few days a cure will be effected.

Weakness of Eyes.—Sulphate of copper, fifteen grains; camphor, four grains: boiling water, four ounces; mix, strain, and when cold make up to four pints, with water; bathe the eyes night and morning with a portion of the mixture.

The Golden-Hair Secret.—The rage for light, gold-color, or even red hair, which has prevailed for some time, has led to various expedients for procuring it. Many ladies have sacrificed fine heads of hair, and in place of their own dark tresses have adopted light wigs; but the prevailing absurdity has been the use of strong alkalies for the purpose of turning the dark hair light. This is the purpose of the auricomus fluid, which may be procured of any hair-dresser; but we warn our fair readers that the use of these products is apt to be disappointing. They certainly will turn black to a brickdust hue, but the color is often disagreeable; it is apt to present itself in patches in different hues, and the effect on the hair is terrible, it often rots and crumbles away. In place in this absurd practice, we recommend the following as available for trying the effect at a ball or other entertainment—for dress purpose, in short:—Procure a packet of gold powder of the hair-dresser. Have ready a very weak solution of gum and water, and one of the small perfume vaporizers now in use. When the hair has been dressed, sprinkle it with the gum-water, by means of the vaporizer, and then shower on the gold powder. It may be put on thick enough to hide the color of the hair, and, owing to the gum, cannot be danced off.

Bloom Rose.—This is a preparation of carmine for the face and lips. Take a quarter of a drachm of the carmine and place it in a phial with half a drachm of liquid ammonia; keep for a few days, occasionally shaking the mixture. Then dilute with two ounces of rose-water, to which half a drachm of essence of roses has been added. Draw off, and keep a week or ten days; then apply with the corner of a soft handkerchief, taking care that if the color is too bright it is reduced by means of pure water.

Moist Feet.—Some people are troubled with moist or damp feet. This complaint arise more particularly during the hot weather in summer time, and the greatest care and cleanliness should be exercised in respect to it. Persons so afflicted should wash their feet twice a day in soap and warm water, after which they should put on clean socks. Should not this effect a cure, they may, after being washed as above, be rinsed and then be thoroughly rubbed with a mixture consisting of half a pint of

warm water and three tablespoonfuls of chloride of soda. An old receipt, which is not so simple as the foregoing, but which is highly recommended, gives the following as a certain cure:—Take twenty pounds of ley, made of ashes of the bay tree, three handfuls of bay leaves, a handful of sweet flag, with the same quantity of calamus aromaticus, and dittany of Crete. Boil all these ingredients together for some time, then strain off the liquor, and add two quarts of port wine. The best time for applying this lotion is at bed time.

Milk of Roses.—This is a cosmetic. Pound an ounce of almonds in a mortar very finely; then put in shavings of honey soap in a small quantity. Add enough rose-water to enable you to work the composition with the pestle into a fine cream; and in order that it may keep, add to the whole an ounce of spirits of wine, by slow degrees. You may scent with otto of roses. Strain through muslin. Apply to the face with a sponge or a piece of lint.

Circassian Cream.—This celebrated preparation is made, according to a published receipt, in this way:—Castor oil, one pint; almond oil, four ounces; liq. potassæ, three drachms; essence of bergamot, oil of cloves and oil of lemon, in equal quantities; and about a dozen drops of otto of roses.

Toilet Vinegar.—Add to the best malt vinegar half a pint of cognac and a pint of rose-water. Scent may be added; and if so, it should be first mixed with the spirit, before the other ingredients are put in.

Philocome.—This is the name of an admired French pomade. It is made by melting three ounces of white wax, by the action of hot water round the vessel in which it is placed, and while the heat is kept up, adding a pound of olive oil. Scents, such as bergamot, may be added as the other ingredients cool. Varieties of perfumer are secured by the manufacturers.

Lavender Water.—This mildest of perfumes is a preparation of oil of lavender; two ounces; and orris root, half an ounce; put into a pint of spirits of wine, and kept for two or three weeks before it is used. It may restraining through blotting-paper of two or three thicknesses.

Bandoline.—This essential of the toilet is prepared of several materials.

1. Simmer an ounce of quince seed in a quart of water for forty minutes; strain, cool, add a few drops of scent, and bottle, corking tightly.

2. Take of gum Tragacanth $1\frac{1}{2}$ drs., water, half a pint; rectified spirits mixed with an equal quantity of water, three ounces, and a little scent. Let the mixture stand for a day or two, then strain

Beautiful Eyelashes.—The effect of the eyes is greatly aided by beautiful eyelashes. These may be secured to a certain extent by a little care, especially if it is taken early in life. The extreme ends should be cut with a pair of small sharp scissors, care being taken to preserve the natural outline, not to leave jagged edges. Attention in this matter usually results in the lengthening of the lashes. Dyeing them is another expedient for increasing their effect often resorted to. A good permanent black is all that is needed, and Indian ink serves the purpose as well as anything. As an impromptu expedient to serve for one night—say while staying at a country house—a hair-pin held for a few seconds in the flame of a candle, and drawn through the lashes, will serve to color them well, and with sufficient durability. We need scarcely add that the hair-pin must be suffered to grow cold before it is used, or the consequence may be that no eyelash will be left to color. Good eyebrows are not to be produced artificially. It is possible, however, to prevent those which are really good from degenerating through neglect. When wiping the face dry after washing, pass a corner of towel over the fore-finger, and set the eyebrows in the form you wish them to assume. And when oiling the hair do not forget to oil the eyebrows also.

Bewitching Eyes.—Beautiful eyes are the gift of nature; but even those of the greatest beauty may owe something to the toilet, while those of an indiffent kind are often susceptible of improvement. We entirely discountenance any tampering with the eye itself, with a view to giving it lustre or brightness. The sight has often been injured by the use of belladonna, preparations of the Calabar bean, eyebright, and other substances having a strong effect on the eyes. But without touching the eye itself it is possible to give the effect of brightness, softness, &c., by means of the eyelids and eyelashes. Made-up eyes are by no means desirable, and to many are singularly displeasing: the same may be said of "made-up" faces generally. Some ladies are, however, persuaded that it adds to their charms to give the eyes a long almond shape, after the Egyptian type, while very many are persuaded that the eye is not seen to advantage unless its apparent size is increased by the darkening of the lids. Both these effects are produced by means of what is termed kohl, a black powder, which may be procured at the chemist's, and is mixed with rose water, and applied with a camel hair brush.

Weak Eyes.—It is well to have on the toilet table a remedy for inflamed eyes. Spermaceti ointment is simple and well adapted to this purpose. Apply at night, and wash off with rose water in the morning. Golden ointment will serve the like purpose. Or there is a simple lotion made by dissolving a very

an all piece of alum and a piece of ~~large~~ ^{large} ~~saga~~ ^{saga} of the same size in a quart of water; put the ingredients into water cold, and let them simmer. Bathe the eyes frequently with it. Styes in the eye are irritating and disfiguring. Foment with warm water; at night apply a bread and milk poultice. When a white head forms prick it with a fine needle. Should the inflammation be obstinate, a little citerine ointment may be applied, care being taken that it does not get into the eye, and an aperient should be tried.

Lip Salve.—This indispensable adjunct to the toilet may be made by melting in a jar placed in a basin of boiling water a quarter of an ounce each of white wax and spermaceti, flour of benzoin fifteen grains, and half an ounce of oil of almonds. Stir till the mixture is cool. Color red with two pennyworth of alkanet root.

Rye Tooth Powder.—Rye contains carbonate of lime, carbonate of magnesia, oxide of iron, manganese, and silica, all suitable for application to the teeth. Therefore a fine tooth-powder is made by burning rye, or rye bread, to ashes, and grinding it to powder by passing the rolling-pin over it. Pass the powder through a sieve and use. The crumb of a French roll, though not so good, may be treated in the same way.

Camphorated Chalk.—This favorite tooth-powder is easily made. Take a pound of prepared chalk, and with this mix two drachms of camphor very finely powdered, and moisten with spirit of wine. Thoroughly mix.

Myrrh Dentrifrice.—To a pound of finely-powdered cuttlefish add two ounces of myrrh, and mix thoroughly.

Wrinkles.—The pomade d'Hebe, used for the removal of wrinkles, is made in this way. Melt white wax, one ounce, to gentle heat, and add juice of lily bulbs two ounces, and honey two ounces, rose water two drachms, and otto of roses a drop or two. Use twice a day.

Ross Water.—It may be made in this way:—Take half an ounce of powdered white sugar, and two drachms of magnesia. With these mix twelve drops of otto of roses. Add a quart of water and two ounces of alcohol, mixed in a gradual manner and filter through blotting paper.

To Clean Kid Gloves.—By rubbing gloves with a clean cloth, dipped in milk and then rubbed on brown Windsor soap, you may restore them to a very fair state of cleanliness.

Superfluous Hairs.—Depilatories are all more or less objectionable. Even when successful they are apt to produce a shiny, disagreeable appearance of the skin. The use of tweezers is the only satisfactory plan. Pluck out the hairs as fast as they grow. wash with warm water, and then apply milk of roses.

Colu Cream.—Put into a jar pint of sweet oil, half an ounce of spermaceti, and two ounces of white wax. Melt in a jar by the fire; add scent. Another method. Melt together a pint of oil of sweet almonds, one ounce of white wax, half a pint of rose water; beat to a paste.

Washes for the Face.—We do not approve of face washes; but as some ladies will use them, we recommend the following as harmless:—Damp the face with glycerine, tempered with rose-water, then powder with the finest magnesia. It imparts a charming whiteness. Less harmless, but more frequently used, is the following:—Procure a pennyworth of bismuth of flake white, and of powdered chalk. Mix with a pennyworth of rose-water. Great care must be taken to wash off this preparation before retiring to rest, as the bismuth is of a poisonous nature.

Burns.—An application of cold, wet common whitening placed on immediately is recommended as an invaluable remedy.

Warts.—At the first appearance of these troublesome things, pare as closely as possible, and touch with lunar caustic; if this is not effective, pare again, and give a second touch, or try acetic acid.

Patent Leather Boots.—In cleaning patent leather boots, first remove all the dirt upon them, then, with a sponge or flannel, the boot should be rubbed lightly over with a paste consisting of two spoonfuls of cream and one of linseed-oil, both of which require to be warmed before being mixed. Polish with a soft cloth.

To Clean Kid Boots.—Mix a little white of egg and ink in a bottle, so that the composition may be well shaken up when required for use. Apply to the kid with a piece of sponge, and rub dry—the best thing to rub with is the palm of the hand. Where the kid shows symptoms of cracking, rub in a few drops of sweet oil. The sole and heels should be polished with common blacking.

Improving the Complexion.—To improve the complexion, some flowers of sulphur should be mixed with a small quantity of milk, and, after standing a few hours, it may be rubbed on the skin.

Grease Spots.—French-chalk is useful for removing grease spots from clothing. Spots on silk will sometimes yield if a piece of blotting-paper is placed over them, and the blade of a knife is heated (not too much) and passed over the paper.

Sticking Plaister.—Stretch a piece of black silk on a wooden frame, and apply dissolved isinglass to one side of it with a brush. Let it dry; repeat process, and then cover with a strong tincture of balsam of Peru.

To Loosen Stoppers of Toilet-Bottle.—Let a drop of pure oil flow round the stopper, and stand the bottle a foot or two from the fire. After a time, tap the stopper smartly—but not too hard—with the handle of a hair-brush; if this is not effectual, use a fresh drop of oil, and repeat the process: it is pretty sure to succeed.

Cleaning Jewelry.—Gold ornaments are best kept bright and clean with soap and warm water, with which they should be scrubbed, a soft nail-brush being used for the purpose. They may be dried in box sawdust, in a bed of which it is desirable to let them lie before the fire for a time. Imitation jewelry may be treated in the same way.

For cleansing silver, either articles of personal wear or those pertaining to the toilet-table or dressing-case, there is nothing better than a spoonful of common whitening—carefully pounded so as to be without lumps—reduced to a paste with gin. It answers admirably.

To Remove a Tight Ring.—When a ring happens to get tightly fixed on the finger, as it will sometimes do, a piece of common twine should be well soaped, and then be wound round the finger as tightly as possible, or as can be borne. The twine should commence at the point of the finger, and be continued till the ring is reached; the end of the twine must then be forced through the ring with the head of a needle, or anything else that may be at hand. If the string is then unwound the ring is almost sure to come off the finger with it.

Chapped Hands.—The simplest remedy is the camphor ball, to be obtained at all chemists. Powdered hemlock bark put into a piece of muslin and sprinkled on the chaps is highly recommended. Or, wash with oatmeal, and afterwards rub the hands over with dry oatmeal, so as to remove all dampness. It is a good thing to rub the hands and lips with glycerine before going to bed at night. A good ointment is made by simmering in a pipkin sweet oil one pint; Venice turpentine, three ounces; lard half a pound; bees'-wax three ounces, till the wax is melted. Rub on or apply with a rag.

Cold Feet.—Those who suffer much in this respect should wear woollen socks or stockings, and put the feet in mustard and water before going to bed, not forgetting to rub them with a coarse towel.

Sunburn.—Milk of almonds, to be obtained at any chemist's, is a good remedy as any in use.

Chilblains.—The remedies are innumerable. 1. When indications of chilblain first present themselves, take vinegar 3 oz., camphorated spirits of wine 1 oz., mix and rub. 2. When they have appeared, rub with alum and water. 3. Put the hands and

feet two or three times a week into warm water in which two or three handfuls of common salt have been dissolved. 4. Rub with a raw onion dipped in salt.

Red Hands.—Wash them frequently in warm, not hot water, using honey-soap and a soft towel. Dry with violet powder, and again with a soft, dry handkerchief. Take exercise enough to promote circulation, and do not wear gloves too tight.

To Purify the Breath.—Cholorate of lime seven drachms, vanilla sugar three drachms; gumeratic five drachms. Mix with warm water to a stiff paste, and cut into lozenges. Take a lozenge occasionally.

To Expel Freckles.—Finely powdered nitre (saltpetre) is said to be excellent. Apply it to the face with the finger moistened with water, and dipped in the powder.

A celebrated physician gives the following as a good Skin Bleacher and Purifier:—Half-pint of skim milk, slice into it as much cucumber as it will cover, and let it stand an hour; then bathe the face and hands. Wash them off with clean soft water when the cucumber extract is dry. If the skin is rough from exposure to the wind, an application of buttermilk at night, washed off with fine carbolic soap in the morning will make the skin smooth and natural.

Profuse Perspiration.—Bathe the hands, feet and parts of the body where the secretion is greatest with a cold infusion of rosemary and sage, and afterwards dust the stockings and under garments with a mixture of two drachms of camphor, four ounces of orris root, and sixteen ounces of starch, the whole reduced to fine powder. Put it in a coarse muslin bag, and shake it over the clothes.

Cleopatra's Enamel for whitening the hands and arms. One ounce of myrrh, four ounces of honey, two ounces of yellow wax, six ounces of rose-water. Mix all well together with the wax, honey and rose-water together in a dish held over boiling water, and add the myrrh while hot. Rub this thickly over the skin before going to bed.

Harem Toilet Water.—Powdered cinnamon one drachm, corriander eighteen scruples, vanilla eighteen scruples, clove eighteen grains, cochineal, mace and saffron the same, spirits of pyrethrum three half-pints. Let them all digest fifteen days—then add half an ounce of orange flower water, oil of lavender and thyme, each nine drops, oil anise eighteen drops, citron the same, oil of ambergris three grains. Mix the ambergris with the spirits and put the two liquids together. Let all stand two or three days, and then filter it.

For Keeping Crimps or Pearls in Summer.—A quarter of an ounce of gum-tragacanth, one pint rose-water and five drops of glycerine; mix and let stand over night. If the bragacanth

not dissolved, let it be a half a day longer, if it be thick add more rose-water, and let it be for some hours. If then it is a smooth solution, nearly as thin as glycerine it is fit for use.

An Elegant Preparation for Whitening the Face and Neck is made of terebinth of Mecca, three grains; oil of sweet almond, four ounces spermaceti, two drachms, flour of zinc, one drachm; white wax, two drachms; rose-water, six drachms. Mix in a bath water, and melt together.

To Soften and Whiten the Skin. Pate Axerative of Bozin, the celebrated perfume has the distinction of being highly commended by the French Royal Academy of Medicine. It is better for toilet use than soaps which contain so much alkali. Take powder of bitter almonds, eight ounces; oil of the same, twelve ounces; savon vert of the perfumes, eight ounces spermaceti, four ounces soap powder, four ounces cinnabar, two drachms; essence of rose, one drachm. Melt the soap and spermaceti with the oil in a bath water, add the powder and mix the whole in a marble mortar. It forms a kind of paste which softens and whitens the skin better than any soap.

Freckled Skin.--Take one ounce of sweet almonds, or of pistachia-nuts, half a pint of elder or rose-water, and one ounce of pure glycerine, grate the nuts, put the powder in a little bag of linen and squeeze it for several minutes in the rose-water; then add the glycerine and a little perfume. It may be used by wetting the face with it two or three times a day. This is a grateful application for a porched, rough skin. It should be allowed to dry thoroughly when it feels sticky or pasty, it may be washed off with warm water without soap.

To Remove Red Pimples.--Sulphur water one ounce, acetated liquor of ammonia quarter ounce; liquor of potassa one grain; white wine vinegar two ounces; distilled water two ounces.

To Remove Black Specks or Fleshworms.--Squeeze them by pressing the skin, and then wash with warm water and rub well with a towel. Then apply the following Liquid of potassa one ounce; cologne two ounces.

Cleopatra's Freckel Balm.--Venice soap one ounce; lemon juice half ounce; oil of bitter almonds quarter ounce; deliquated oil of tartar quarter ounce; oil of rhodium three drops. Dissolve the soap in lemon juice, then add the two oils, and place the whole in the sun till it acquires the consistence of ointment, and then add the oil rhodium. Anoint the freckly face at night with this balm, and wash in the morning with pure water.

To Remove Stains or Spots from Silk. Take five ounces of soft water and six ounces of alum powdered, boil the mixture

for a short time, then pour it in a vessel to cool. Before using it, it must be made warm, when the stained part may be washed with it, and left to dry.

To Bleach Hair.—It has been found in the bleaching of hair that gaseous chlorine is the most effectual. The hair should be cleaned for this purpose by a warm solution of soda, and washed afterwards with water. While moist, it is put into a jar of chlorine gas introduced, until the air in the jar looks greenish. Allow it to stand for 24 hours, and if necessary repeat the operation.

Cheap Hair Oil.—These are made of fixed oils (usually almond or olive oil) gradually receding in quality, scented with ottar and bergamot. A few drops of neroli, or oil of rose-geranium, or a little hwife and jasmin, with or without two or three drops of musk or hwife royale, are occasionally added to improve and slightly modify the odor.

Rose Pomade.—Melt together in a water bath, one pound of of prepared grease and two ounces spermaceti; triturate in a mortar until it becomes white and smooth, then add and incorporate thoroughly three ounces oil of sweet almonds, one-fourth drachm oil of roses, and one-fourth drachm oil of geranium. A rose color is obtained by heating the oil of almonds and adding to it one-half drachm of alkanet and straining it before incorporation.

A New French Remedy for Baldness.—Croton oil, one of the best French remedies for baldness, is employed by simply adding it to oil or pomade, and stirring or agitating the two together until admixture or solution be complete. The formula adapted by the eminent French physician who introduced this remedy, and who speaks in the most confident and enthusiastic way of the success attending its use is.—take croton oil 12 drops (minims) oil of almonds 4 Troy drachms. mix. A little is to be well rubbed on the scalp twice a day. Softdown we are assured appears in three weeks.

Hungarian Pomade for the Mustache.—Melt by a gentle heat one-half pound gum-arabic, and one-half pound of oil soap in one pint rose-water, then add one pound white wax, constantly stirring, when of a uniform consistency, add one ounce ottar of bergamot, and one-half drachm ottar thyme for perfume. If required to be brown, color it with tube-burnt amber, or for black, use tube ivory-black.

To Make Prepared Chalk.—Rub one pound chalk with sufficient water, adding gradually, to make a smooth cream, then stir this into a large quantity of water, after the coarser particules have settled, decant the milky fluid into another vessel and allow the chalk to settle; decant the clear water and dry the sediment.

Removing the Yellow Color from Teeth.—Take of dry apochlarite of lime one-half drachm, red coral, two drachms tincture and well mix thoroughly. This powder is employed in the following manner: A new brush is slightly moistened, then dipped in the powder and applied to the teeth. A few days after the use of this powder, the teeth will acquire a white color.

Varnish for Shoes.—Put one-half pound gum-shellac, breaking soap in small pieces into a quart bottle or jug, cover it with alcohol, cork it tight, and put it on a shelf in a warm place, shake it well several times a day, then add a piece of camphor as large as hen's egg, shake it well, and in a few hours shake it again and add one ounce lampblack. If the alcohol is good it will be ready for use in two days as it will all be dissolved. Shake before using. If it gets too thick, add alcohol, pour out two or three teaspoonfuls in a saucer, and apply it with a small paint brush. If the materials are all good it will dry in five minutes, giving a gloss equal to patent leather, and will be removed only by wearing off.

Brilliant Paste Blacking.—Ivory black two pounds, molosses one pound, olive oil and oil of vitrol each one-fourth pound, water to make into thin paste.

Liquid Jet Blacking.—Ivory black and mollasses, of each, one-fourth pound, oil of vitrol one ounce, sweet oil two ounces, sour beer one pint. Mix the first two gradually, add the vitrol, dilute with thrice its weight of water. Add the oils. Mix well and let it stand three hours. Then add beer and stand over night. Then ready for use.

To Clean Gold Ornaments.—Gold ornaments may be thoroughly cleaned by immersion for a few seconds in a weak solution of ammonia. Then wash with warm water and soap.

To Clean Silver.—To clean silver, mix two teaspoonfuls of ammonia in a quart of hot soap suds. Put in the silverware and wash with a soft brush and dry quickly.

Aromatic Spirits of Vinegar.—Take of the flowers of aromatic add perfumed shrubs, such as are directed for aromatic vinegar, and digest them in strong vinegar, add a quarter of a pint of spirits of wine to each pint of the infusion of vinegar, and then distil the composition.

Lavender Water.—Take 1 ounce of lavender and bergamotte, 1 pint of rectified spirits of wine, 4 cloves bruised. Shake the above well, let it stand a month, then add 2 ounces of distilled water, and if you wish to retain its perfume, add 1 scruple of essence of musk, or ambergris, and distil the mixture.

For Improving the Hair.—*Palma-Christi Oil, for thickening the Hair.*—Take 1 ounce of Palma-Christi oil, add oil of lavender or bergamotte to scent it. Let it be well brushed into the hair twice a day for two or three months, particularly applying it to those parts where it may be most desirable to render the hair luxuriant. This is a simple and valuable oil, and not in the hands of any monopolist.

Macassar Oil.—There is, in fact, no such thing imported into the country, although many thousands of pounds are annually expended, both in the advertising and in the purchasing of an article which passes under the name. The ingredients of which it is composed are the most simple and economical. The following, we are told, is the genuine recipe:—Take one quart of olive oil, two and a half ounces of spirits of wine, one ounce of cinnamon powder, five drachms of bergamotte. Heat them together in a large pipkin, then remove it from the fire, and add four small pieces of alkanet root; keep it closely covered for six hours, let it then be filtered through a funnel lined with blotting or filtering paper.

An Excellent Water to prevent Hair falling off, and to thicken it.—Put one pound of unadulterated honey into a still, with three handfuls of the tendrils of vine and the same quantity of rosemary hops. Distil as cool and as slowly as possible. The liquor may be allowed to drop till it tastes sour.

Excellent Hair Oil to prevent Baldness.—Boil half a pound of green southernwood in one and a-half pint of sweet oil, add half pint of port wine. When boiled strain it through a fine linen bag three times; each time adding fresh southernwood, then add two ounces of bear's grease, and replace it near the fire in a covered vessel, until the bear's grease be dissolved. Take it off, thoroughly mix the ingredients, and bottle close.

To Dye the Hair Flaxen.—We have heard the following is effective: Take a quart of lye prepared from the ashes of vine twigs, briony, celadine roots, and turmeric, of each half an ounce, saffron and lily roots, of each two drachms, flowers of mullein, yellow stechas, broom, and St. John's wort, of each a drachm. Boil these together and strain off the liquor clear. Frequently wash the hair with the fluid, and it will change it, we are told, in a short time, to a beautiful flaxen color.

Preventative Wash for Sunburn.—Take two drachms of borax, one drachm of Roman alum, one drachm of camphor, half an ounce of sugar-candy, one pound oxgall. Mix and stir well together, and repeat the stirring three or four times a-day, until it becomes transparent. Then strain it through filtering or blotting paper, and it will be fit for use. Wash the face with the mixture before you go into the sun.

Grape Lotion for Sunburn.—Dip a bunch of green grapes in a basin of water; sprinkle it with powdered alum and salt mixed; wrap the grapes in paper, and bake them under hot ashes; then express the juice, and wash the face with the liquid, which will usually remove either freckles, tan, or sunburn.

Lemon Cream for Sunburn and Freckles.—Put two spoonful of sweet cream into half a pint of new milk, squeeze into it the juice of a lemon, add half a glass of genuine French brandy, a little alum and loaf sugar; boil the whole, skim it well, and when cool, it is fit for use.

Sulphur Wash.—Break one ounce of sulphur, and pour over it one quart of boiling water: allow it to infuse for twelve or fourteen hours, and apply it to the face two or three times a day, for a few weeks. This application is equally useful in removing that roughness of the skin which generally succeeds pimples. A more powerful application is sometimes prepared with vinegar and the acetated liquor of ammonia, or the spirit of minderus. Or, the following, which will be equally effective, and known as—

Sir William Knighton's Lotion.—Half drachm of liquor of potassa, three ounces of spirits of wine to be applied to the pimples with a camel's-hair brush, and if two powerful, add half an ounce of cold water, which has been boiled and strained; distilled water is better.

For Removing Wrinkles.—Take two ounces of the juice of onions, two ounces of the white lilly, two ounces of Norbonne honey, and one ounce of white wax; put the whole into a new earthen pipkin until the wax is melted, then take the pipkin off the fire, and continue stirring briskly until it grows cold. This should be applied on going to bed, and allowed to remain on till the morning.

Lotion for Wrinkles.—Take the second water of barley one pint, and strain through a piece of fine linen, and a dozen drops of the balm of Mecca, shake it well together until the balm is thoroughly incorporated with the water, which will be effected when the water assumes a whitish or turgid appearance. Before applying, wash the face with soft water, we have heard, that if used once a day it will beautify the face, preserve the freshness of youth, and give a surprising brilliancy to the skin.

RECEIPTS FOR TOOTH POWDERS, ETC.

Aromatic Tooth Powder.—Take finely powdered chalk, two drachms, pure starch, two drachms, myrrh, two drachms, ginger half drachm., cuttle-fish bones, two drachms; flower of lavender, and sugar at pleasure, and mix well together.

Camphor Paste.—Take 1 ounce of boil ammoniac, 4 drachms of camphor; let the above be very finely powdered, then mix it with sufficient honey to make it into a smooth paste, triturate it until entirely smooth. This is a most excellent paste for preserving and beautifying the teeth.

Preservative Tincture for the Teeth and Gums.—Take 4 drahms of camphor, 1 ounce of tincture of myrrh, 1 ounce of tincture of bark, and 1 ounce of rectified spirits of wine; mix them, and put 30 or 40 drops in a wine-glass of water. Pour a little of this upon your brush before you apply it to the powder, and when the teeth are clean, wash the mouth, teeth, and gums, with the remainder. It will in ordinary cases prevent tooth-ache.

Powerfully Cleansing Dentifrice.—Take fine powder of pumice-stone, 4 drachms, fine powder of cuttle-fish bone, 4 drachms; add one scruple of sub-carbonate of soda; mix them well together, color and scent according to taste, and then pass it through a fine sieve.

Stimulating Eye Water.—Brandy, 2 drachms, water, 1 ounce. If it be not sufficiently strong, add a little more brandy; if, upon getting under the eye-lid, a slight pain is caused, it is strong enough; if acute pain, it is too strong. Or, take 3 grains of the acetate of zinc, $2\frac{1}{2}$ ounces of rose-water, $3\frac{1}{2}$ ounces of distilled water: mix.

Chapped Lips.—Put a $\frac{1}{4}$ of an ounce each of benjamin, storax, and spermaceti, two-pennyworth of alkanet root, a large juicy apple chopped, a bunch of black grapes bruised, a $\frac{1}{4}$ of a pound of fresh butter, and 2 ounces of bees-wax, into a new tin saucepan. Simmer gently till the wax, etc., are dissolved, and then strain it through a linen cloth. When cold, melt it again, and pour it into small pots or boxes.

Bad Breath.—Take 5 to 10 drops of hydrochloric acid in half a tumbler of spring water, a little lemon juice, and loaf sugar rubbed on lemon peel to flavor it to suit the palate. Let this mixture be taken three times a day for a month or six weeks, and if useful, then continued occasionally. It is a pleasant refrigerant and tonic draught.

Chilblain Lotion.—Take liquor plumbi acetatis, 1 ounce, $\frac{1}{2}$ a pint of cold water, add 1 glass of good brandy or rum. Mix, until it becomes of a uniform white. Apply the lotion with linen several times a day.

Infalible Corn Plaster.—Take 3 ounces of gum ammoniac, 2 ounces of yellow wax, 6 drachms of verdigris; mix them together, and spread the composition on a piece of linen or soft

leather, first rubbing down the corn with an instrument like a file; it is to be purchased at most chemists. A file not too coarse will, however, answer the same purpose. Let the plaster be renewed in a fortnight, if necessary.

Bath of Modesty.—Take 4 ounces of sweet almonds, peeled, 1 pound of pine-apple kernels, 1 pound of elecampane, 10 handfuls of linseed, 1 ounce of marsh mallow roots, 1 ounce of white lily roots. Pound all these till reduced to a paste, and tie it up in several small bags, which are to be thrown into a tepid bath, and pressed until the water becomes milky. A more simple method of preparing a bath of this kind, is given by M. Moreau de la Sarthe, who says, it is sufficient to throw into the bath a sufficient quantity of almonds made into a paste, to give the water a milky appearance.

Milk of Houseleek.—Beat a quantity of houseleek in a marble mortar, squeeze out the juice and clarify it. When you want to use it, pour a few drops of rectified spirit on the juice, and it will instantly turn milky. It is a very efficacious remedy for a pimpled face, and preserves the skin soft and smooth.

Virgin Milk.—Take equal parts of gum benzoin and styrax, dissolve in a sufficient quantity of spirits of wine, the spirits will then become a reddish tincture, and exhale a very fragrant smell. Some people add a little balm of Gilead. Drop a few drops into a glass of clear water, and by stirring the water, it instantly changes milky. Ladies use it successfully to clear the complexion.

Cosmetic Juice.—Make a hole in a lemon, fill it with sugar candy, and close it with leaf gold, applied over the rind that was cut out; then roast the lemon in hot ashes. When desirous of using the juice, squeeze out a little through the hole already made, and with it wash the face with a napkin. This juice is said to cleanse the skin and brighten the complexion wonderfully.

Almond Paste for the Hands.—Take 1 pound of sweet almonds, a $\frac{1}{2}$ of a pound of bread crumbs, $\frac{1}{2}$ a pint of spring water, $\frac{1}{2}$ pint of brandy, and the yolks of two eggs. Pound the almonds with a few drops of vinegar or water, to prevent their oiling, add the crumbs of bread, which moisten with the brandy, as you mix it with the almonds and the yolks of eggs. Set this mixture over a slow fire, and stir it continually, or it will adhere to the vessel.

Almond Paste for Chapped Hands, and which will preserve them smooth by constant Use.—Mix a quarter of a pound of unsalted hog's-lard, which has been washed in common, and then in rose-water, with the yolks of two new-laid eggs, and a large spoonful of honey. Add as much paste from almonds (well pounded in a mortar) as will work it into a paste.

Infalible cure for the Tooth-ache.—Take alum, reduced to an impalpable powder, 2 drachms; nitreous spirits of ether, 7 drachms. Mix and apply them to the tooth. This is said to be an infalible cure for all kinds of Tooth-ache (unless the disease is connected with rheumatism.)

Musk Soap.—Take 2 ounces of marsh mallow roots, cleaned and dried in the shade, reduce them to powder, add one-half an ounce of starch, do. of flour, 3 drachms of fresh pine-apple kernels, 1 ounce of orange pippins, 1 ounce of oil of tartar, and of oil of almonds, and a one-quarter of a drachm of musk. Reduce the dry ingredients to a very fine powder, and to each ounce of powder add one-half an ounce of Florence iris. Then steep 4 ounces of fresh roots, in orange-flower water, let them stand a night, squeeze them well, and with the mucilage that comes from them, make a paste with the powder. Let this paste dry and mould it into round balls. Nothing makes the hands softer or whiter.

Lotion of Arnica for Bruises, Sprains &c.—Take one ounce of arnica flowers dried and put them in a wide-mouthed bottle; pour just enough scalding water over them to moisten them and afterwards about one pint spirits of wine. In case of burns or buises, &c., wet a cloth in the arnica and lay it on the part affected; renew the application occasionally, and the pain will soon be removed.

Instantaneous Pain Killer.—Take aqua-ammonia, sulphuric ether and alcohol equal parts, and apply over the pain.

Camphor Ointment.—Camphor finely powdered one ounce, lard two ounces. Mix. It is designed to ripen indolent tumors.

Salve for Sore Breasts.—Take one pound tobacco, one pound of spikenard, one-half pound of cumfrey, and boil them in three-quarter chamber-lye till almost dry, squeeze out the juice, add to it pitch and bees-wax, and simmer it over a moderate heat to the consistence of salve. Apply it to the parts affected when cold.

Poultice for a Fester.—Boil bread in lees of strong beer, apply the poultice in the general manner. This has saved many a limb from amputation.

Caustic for Corns.—Take of liquid tircchloride of antimony and tincture of iodine or each two drachms avoirdupois; protiodide of iron seven grains, mix and preserve it in a well-stoppered phial. Applied with care; two or four applications are said to effect a cure.

Wash for Inflamed Eyes.—Take ten drops extract of

lead (the liquor of acetate of lead) distilled vinegar two drachms, distilled water 4 ounces. This is an excellent wash for weak eyes.

Treatment of Styes.—A sty is a small boil which projects from the eyelid much inflamed and very painful. The application of ice to the part will sometime check it in the beginning. Apply a poultice of linseed meal, or bread and milk, and take at the same time an aperient. If the sty is ripe, puncture it and then apply a mild ointment.

To Remove Warts.—A daily application of either of the three following remedies is effective in dispersing warts: Touch the wart with a little nitrate of silver (lunar caustic) or with nitric acid or aromatic vinegar. The lunar caustic produces a black and the nitric acid a yellow stain, which passes off in a short time, the vinegar scarcely discolors the skin. Sparks of fractional electricity repeated daily by applying the wort to the conductor of an electrical machine, have been also successfully employed as a cure for these troublesome and unsightly excrescences.

To Cure Soft Corns.—Dip a piece of linen rag in turpentine and wrap round the toe on which the corn is situated, night and morning. The relief will be almost immediate, and and in a few days the corn will disappear.

To Cure Hard Corns.—Bind them up at night with arnica. In the morning cut off a small piece of lemon, nick it so as to let in the toe with the corn, tie this, and by night you will find that with a blunt knife you can remove a considerable portion of the corn by two or three application the corn will be cured.

Eau de Cologne.—Take 38 drops of essence of edral, 38 drops of bergamote, 60 drops of orange, 38 drops of citron, 32 drops of neroli, 26 drops of Romain, 26 drops of meline, 1 pint of spirits of wine, 30 degrees above proof; mix and distil.

To Remove Hair from the Nostrils.—Take some very fine and clean wood ashes; dilute them with a little water, and with the finger rub some of the mixture within the nostrils. The hair will be removed without causing the least pain. The hairs of the nostrils, like those of the entrance of the ear, ought not to be removed, unless troublesome or unseemly; they are the principal safeguards against the intrusion of insects, which might otherwise insinuate themselves into these delicate passages, to the great annoyance and danger of the individual thus invaded.

Another Depilatory.—The following directions are laid down by a French author to remove superfluous hair either from the forehead, or too long on the back of the hands, round the wrists and arms, and in the nostrils and other parts. Take polypody of the

oak, and cut and split it into small pieces. Put it into a cucur-bite, pour some white wine upon it until it be covered the length of a finger, and let it digest in balneum mariæ for twenty-four hours; then distil it with boiling water, until nothing more comes over into the receiver. The method of using the fluid is by dipping a linen rag in it, and then applying the same on the back of the hand, or other parts, and letting it remain there all night; repeating the operation until the hair falls. The distilled water of the leaves and roots of chelidony, applied as above, has the same property. And the oil of nuts rubbed often on the head of children prevents the hair from growing.

A Powder for Preserving the Hair.—The following powder has the name at least of facilitating the regeneration of the hair, and strengthening its roots. Still more valuable properties have been ascribed to it,—such as that of rousing the imagination to vigorous efforts, and strengthening the memory,—delightful properties, if they could be realized by such simple means! Take an ounce and a half of red roses; a small quantity each of calamus aromaticus (sweet-scented flag) and of the long cyperus; an ounce of benzoin; six drachms of aloes (the wood of;) half an ounce of red coral, and the same quantity of amber; four ounces of bean flower, and eight ounces of the root of Florentine iris. Let the whole be mixed together, and reduced to a very fine powder, to which add a few grains of musk. This powder we presume is intended to be sprinkled on the hair in the same manner as hair powder is generally used, and having remained for a time embedded with the hair, to be removed by means of comb and brush; and to be occasionally applied and removed. It is said to regenerate the hair, and strengthen the roots, and to possess the properties which are above enumerated.

To make the Hair Grow, and Prevent it from Falling.—The following recipes are selected from a work published some years ago in Paris, entitled, 'Manuel Cosmetique des Plantes.' Take the roots of young vines, the roots of hemp, and young cabbages, of each two handful—dry, and then burn them—make afterwards a lye with ashes; before the head is washed with this lye, it must be rubbed with honey; and continue both for three successive days. This will not only make the hair grow, but restore it upon bald places, under certain habits and constitutions of body. Pulverize some parsley seed, and use it as hair-powder for three nights at the commencement of the year, and it will prevent your hair from falling.

To make the Hair grow quick.—Dip every morning the teeth of your comb in the juice of nettles, and comb the hair against the grain. Others after having shaved their heads, make fomentations with wormwood, sage, betony, vervain, marjoram, myrrh, roses, dill, moss of the oak and rosemary.

Wash a la Marie Antoinette.—Take half a dozen lemons and cut them in small slices, a small handful of the leaves of white lilies, and southernwood, and infuse them in two quarts of cow's milk, with an ounce and a-half of white sugar, and an ounce of rock-alum. These are directed to be distilled in balneum mariæ. The face, at bed-times, is to be rubbed with this water; and it is said that it gives a beautiful lustre to the complexion. It is a safe application, and its effects are certain.

Pomatum for the Skin.—Take oil of white poppy seed, and of the fine cold seeds, each a gill; spermaceti three quarters of an ounce; white wax, an ounce; mix them, *secundum artes*, into a pomatum.

Paint for the Face.—To one part of Venice talc, in powder, add two parts of the oil of camphor; let them digest in a sand-bath till the whole becomes very white.

Salve which may be used as Paint.—Take four ounces of very white wax, five ounces of oil of bitter almonds, one ounce of very pure spermaceti, one ounce and a half of white lead washed in rose-water, and half ounce of camphor. Mix the whole up into a salve, which may be preferred to all other white.

Rouge.—Take French chalk prepared, four ounces; oil of almonds, two drachms; carmine, one ounce.

Liquid Rouge.—A liquid rouge to produce a perfect imitation of the colors of nature may be made as follows:—Add to a pint of French brandy, half an ounce of benzoin, an ounce of red sandal wood, half an ounce of Brazil wood, and the same quantity of rock alum. Cork the bottle with care, shake it well once a day, and at the end of twelve days it will be fit for use. The cheeks are to be lightly touched with it.

Turkish method of Preparing Carmine.—Infuse during three or four days, in a large jar filled with white wine vinegar, a pound of Brazil wood, shavings of Femambucca, having first beaten them to a coarse powder: boil them afterwards for half an hour; then strain off the liquor through a coarse linen cloth, set it again upon the fire, and, having dissolved half a pound of alum in white wine vinegar, mix both liquors together and stir the mixture well with a spatula. The scum that rises is the carmine; skim it off carefully, and dry it for use.

A fragrant Quid.—Take gum fragarant and cashoo, enough of each to make a ball about the size of a filbert; scent it with Cologne water, oil of bergamot, ambergris, or any other agreeable perfume. Keep a quid made in this manner always in your mouth, when you want your breath sweet; or, you may chew occasionally a bit of the root of Florentine iris, or gum mastic;

or wash the mouth frequently, as already observed, with the tincture of myrrh; or, at night going to bed, chew a piece of fine myrrh, about the size of a small nut; or every night and morning a clove; or about the size of a small bean of burnt alum; or, take good old port, 1 pint; best red bark, one-half ounce; white wine, one-half pint, cloves, bruised, No. 3. Let them stand for a week. Take a wine glassful going to bed. This is also an excellent remedy for loose, spongy, and scorbutic gums, decayed teeth, &c.

Mixture for Rotten Teeth.—Make a balsam with a sufficient quantity of honey, two scruples of myrrh in fine powder, a scruple of gum juniper, and ten grains of roche-alum. A portion to be applied frequently to the decayed teeth.

To Whiten and Beautify the Teeth.—Take gum tragacanth, 1 ounce; pumice stone, 2 drachms; gum arabic, one-ounce, cream of tartar, 1 ounce. Dissolve the gums in rose water, and, adding to it the powder, form the whole into little sticks, which are to be dried slowly in the shade, and afterwards kept for use.

For Watery and Inflamed Eyes.—Foment frequently with decoction of poppy heads; when the irritation and inflammation occur, a tea-spoonful of cognac brandy, in four ounces of spring water, may be used three or four times in the course of the day as a strengthening lotion.

Poultice for Moistened Eyes.—Take half a pint of alum and mix with it a sufficient quantity of powdered red rose leaves to give it a proper consistence. Applied over the eyes between gauze, it is an excellent gently astringent lotion for watery and weak eyes, and admirably cools and represses defluxions. A little of the juice of rue, mix with clarified honey, dropped now and then into the eyes, is used with the same intention.

Blacken Eye-lashes and Eyebrows.—The simple preparations for this purpose are the juice of elderberries; burnt cork, or cloves burnt at the candle. Some employ the black of frankincense, resin, and mastic; this black, it is said, will not come off with perspiration.

Wash to Blacken Eyebrows.—Wash the eyebrows previously with the decoction of galls, then rub them with a brush dipped in the solution of green vitriol, and let them dry. A little gum may be added to the last.

To Improve the Skin.—Take two ounces of Venice soap, and dissolve it in two ounces of lemon juice. Add one ounce of the oil of bitter almonds, and a like quantity of the oil of tartar. Mix the whole and stir it well till it has acquired the consistence of soap; and use it as such for the hands. The paste of sweet

almonds, which contains an oil fit for keeping the skin soft and elastic, and removing indurations, may be beneficially applied to the hands and arms.

For Chilblains.—Take spirit of turpentine, 1 ounce; balsam of Copayva, 1 ounce; mix them together, and rub the afflicted parts two or three times a day with a portion of it.

Shaving Liquid.—Many prepare it for themselves, 200 per cent. cheaper than they can buy it, by dissolving a quantity of the best Spanish soap in spirits of wine, any common spirit, when the liquid will be formed, of a fine transparency, and of a somewhat gelatinous consistence.

Transparent Soap.—This may be made by slowly and carefully evaporating the above solution, which will leave a beautiful mass of pure soap. It is not indeed so cheap, but it pleases the fancy of some better than articles procured at less expense. The more creamy the lathe is, and the less watery and forthy, the better; as in that state the alkali is in a fitter state for crisping the beard, but this can only be done with very hot water.

Aromatic bath for the Feet.—Take penny-royal, sage, and rosemary, four handfuls, angelica three handfuls; juniper berries, four ounces; boil these ingredients in a sufficient quantity of water, and strain off the liquor for use at the requisite temperature.

A Cosmetic Bath.—Take two pounds of Barley, or bean flour, or meal; eight pounds of bran, and a few handfuls of borage leaves. Boil these ingredients in a sufficient quantity of spring water. This both cleanses and softens the skin in a superior degree. But the most celebrated baths are those of asses' milk. The ancient authors have immortalized the memory of the fifty-three she-asses, which for this purpose, accompanied the train of the celebrated Paphæa.

A Kalydor for the Complexion.—Take emulsion of bitter almonds, 1 pint; oxymuriate of quicksilver, 2 and one-half pints; sal ammonia, 1 drachm. A wash for pimples, freckle-tanned complexions, or scurf on the skin. To be used moderately by means of a sponge, after washing the face and hands with soft-soap and warm water.

Sweet Scented bag to wear in the Pocket.—Take thin Persian and make it into little bags about four inches wide, in the form of an oblong square. Rub the insides slightly with a little civet, then fill them with coarse powder a la Marechale, or any other odoriferous powder—to which may be added a few cloves, with a little yellow sanders beaten small, and sew up the mouths of the bag.

A cool evaporating Aromatic Lotion for the Face, Hands and Neck.—Take spirits of lavender, 1 ounce; rose-water, 1 pint; distilled water, one-half pint.

Perfume for Gloves.—Take ambergris, 1 drachm; civet, 1 drachm; orange-flower water, one-quarter ounce. Mix these ingredients well, and rub them into the gloves with fine cotton wool, pressing the perfume into them.

French Lip Salve.—Lard, 26 oz., white wax 2 oz.; nitre and alum in fine powder, of each one-half oz., alkanet to color.

German Lip Salve.—Butter of cacao one-half oz., oil of almonds one-quarter oz.; melt together with a gentle heat, and add six drops of essence of lemon.

White Face Salve.—One of most innocent kind is prepared from Venetian tale, or French chalk, finely levigated. These are sometimes calcined, to increase their whiteness; but this diminishes their unctuousity and adhesiveness. Digestion with vinegar, and subsequent washing, are practised for the same purpose.

Shaving Powder.—Melt in a water bath 2 pound of white soap with 1 ounce of powdered spermaceti and one-quarter of chlorate of potash dissolved in a little water, or rose-water. Pour the liquified soap into a shallow mould; when solidified shave it fine, and dry as above.

Shaving Paste.—1. Melt together 1 dr. each of spermaceti, white wax, and almond oil; beat it up with 2 oz. of the best white soap, and a little lavender or Cologne water. 2. White soft soap 4 oz., powdered Castile soap 1 oz., oil of olives or almonds one-quarter oz.

Shaving Liquid.—Essence of soap. 1. White soap 3 oz., proof spirit 8 oz., distilled water 4 oz., carbonate of potash 1 dr., essence of lemon q. s. Dissolve the soap without heat, and add the potash and essence.

White Metal.—This is a splendid article for spoons, castors, ornaments, and in short articles of every description. It closely resembles silver, and may be used with great profit by the manufacture of an infinite variety of commercial articles of almost every description. The alloy is 10 oz. of lead, 6 oz. of bismuth, 4 drachms of antimony, 8 oz. of brass, and 10 oz. of block tin, all melted together. This can be run into moulds or hammered into any shape, as it is perfectly malleable.

Imitation Pure Silver—So perfect in its resemblance that no chemist living can detect it from pure virgin silver. It is all melted together in a crucible. Quarter of an oz. of copper, 2 oz. of brass, 3 oz. of pure silver, 1 oz. of bismuth, 2 oz. of saltpetre,

2 oz. of common salt, 1 oz. of arsenic, 1 oz. of potash. Add a little boraz to make it run easy.

Writing Inks. — **Runge's Black Writing Fluid.**—Boil logwood 22 lb., in enough water to yield 14 gallons of decoction. To 1000 parts of this decoction, when cold, add one part of chromate of potash. The mixture is to be well stirred. The proportions are to be carefully observed, and the yellow chromate, not the bichromate, employed. (This ink is said to possess some great advantages, to adhere strongly to paper, so that it can neither be washed off by water, nor even altered by weak acids; to form no deposit; and not to be in the least acted upon by steel.

Receipt to make one Barrel of Soap. — Dissolve 15 lb. of bar soap in 15 gallons of boiling water, and let it get cold. Cut up the soap in slices. When cold it will be thick like jelly. Dissolve 15 lb. of sal soda in 15 gallons more of boiling water, which will take 3 minutes, then add to this composition 6 lb. of unslacked lime; let these articles boil together 20 minutes. When cold and settled, turn off this fluid and stir it up with the soap, be careful not to disturb the sediment, then add three pints of alcohol, and stir all these articles together.

Note.—This is the receipt used for the President's house at Washington, improved by further experiments. It is said to look as well and last as long as oil paint, on wood, brick or stone.

Excellent Cheap Whitewash. Slack the lime as usual, except that the water used should be hot, and nearly saturated with salt; then stir in four handful of fine sand, to make it thick like cream. Coloring matter can be added to both, making a light stone color, or a light buff.

Bandoline. — 1. Simmer an ounce of quince-seed in a quart of water for forty minutes; strain, cool, add a few drops of scent, and bottle, corking tightly. 2. Take of gum tragacanth one and a-half drachm; water, half a pint rectified spirits mixed with an equal quantity of water, three ounces; and a little scent. Let the mixture stand for a day or two, then strain. 3. It may be made of Iceland moss, a quarter of an ounce boiled in a quart of water, and a little rectified spirit added, so that it may keep.

Sticking Plaster. — Stretch a piece of black silk on a wooden frame, and apply dissolved isinglass to one side of it with a brush. Let it dry; repeat process, and then cover it with a strong tincture of balsam of Peru.

French Pomatum. — Lard, four ounces; honey, four ounces; best olive oil, two ounces. Melt the above together, and let it stand till cold, when the honey will sink to the bottom; then

melt it once again without the honey. Scent it with a quarter of ounce of essence of bitter almonds, put in with the liquid after the second melting, essence of jessamine, or otto of roses.

Shampoo.—Bay rum one pint, tincture of cantharides one drachm, carbonate of ammonia one-half drachm, salts tartar one-half drachm; mix.

To Remove Tan.—An excellent wash to remove tan is called *Creme de l'Enclos*, and is thus made: New milk, half pint; lemon juice, one-quarter ounce; white brandy, half ounce. Boil the whole, and skim it clear from all scum. Use it night and morning.

To Remove Black Specks or "Fleshworms."—Sometimes little black specks appear about the base of the nose, or on the forehead, or in the hollow of the chin, which are called fleshworms, and are occasioned by coagulated lymph that obstructs the pores of the skin. They may be squeezed out by pressing the skin, and ignorant people suppose them to be little worms. They are permanently removed by washing with warm water, and severe friction with a towel, and then applying a little of the following preparation: Liquor of potassa, one ounce; cologne, two ounces; white brandy, four ounces.

French Face Wash. Take equal parts of the seeds of the melon pumpkin, gourd and cucumber, pounded till they are reduced to powder; add to it sufficient fresh cream to dilute the flour, and then add milk enough to reduce the whole to a thin paste. Add a grain of musk, and a few drops of the oil of lemon. Anoint the face with this, leave it on twenty or thirty minutes, or overnight if convenient, and wash off with warm water. It gives a remarkable purity and brightness to the complexion. Infuse a handful of well sifted wheat bran for four hours in white wine vinegar; add to it five yolks of eggs and two grains of musk, and distil the whole. Bottle it, keep carefully corked, fifteen days, when it will be fit for use. Apply it overnight, and wash in the morning with tepid water.

Prevent Hair from Falling Out.—Boxwood shavings, 6 oz.; proof spirit, 12 oz.; spirits of rosemary, 2 oz.; spirits of nutmegs one-half oz.

Spanish Whiteness.—Infuse wheat-bran, well sifted, for four hours in white vinegar; add to it five yolks of eggs and two grains of ambergris, and distil the whole. It should be carefully corked for twelve or fifteen days, when it will be fit for use.

Wash for the Skin.—Distil two handfuls of jessamine flowers in a quart of rose-water and a quart of orange-water. Strain through porous paper, and add a scruple of musk and a scruple of ambergris.

To Remove Pimples.—There are many kinds of pimples, some of which partake almost of the nature of ulcers, which require medical treatment; but the small red pimple, which is most common, may be removed by applying the following twice a day:—Sulphur water, 1 oz.; acetated liquid of ammonia $\frac{1}{4}$ oz.; liquor of potassa, 1 gr.; white wine vinegar, 2 oz.; distilled water, 2 oz.; These pimples are sometimes cured by frequent washing in warm water, and prolonged friction with a coarse towel. The cause of these pimples is obstruction of the skin and imperfect circulation.

Wash for Scald Heads.—Take $\frac{1}{2}$ an ounce of sulphate of potassa, 1 pint of lime water, 1 ounce of soap liniment; mix and apply to the head two or three times a day.

Eau de Cologne.—Mix essence of bergamotte, lemon, lavender, and orange-flower water, of each 1 drachm; essence of cinnamon, $\frac{1}{2}$ a drachm, spirits of rosemary, and honey-water, each two ounces; spirits of wine, 1 pint. Let the mixture stand a fortnight, then distil.

Cure for Earache.—Is instantly relieved by saturating a piece of cotton with glycerine and laudanum, equal parts and inserting it in the ear.

Cure for Scratches.—Take equal parts of balsam fir and lard; mix, heat and stir until thoroughly simmered together. Wash the sores well with Castile soap, and apply.

Headache Drops.—Castor, gentian and valerian roots, bruised, of each one-fourth ounce; laudanum one ounce, sulphuric ether one and one-half ounces, alcohol and water each eight ounces; put in a bottle and let stand two days. One teaspoonful two or three times daily.

Tonic Ball.—Ginger two drachms, gentian one drachm, Peruvian bark one-half ounce, fenugreek one-fourth ounce; mix and form into a ball.

Sore Lips.—The lips become sore frequently at the angles of the mouth, from bruising with the bit. They can be cured by applying the following mixture: Tincture of myrrh two ounces, tincture of aloe one ounce, tincture of opium one-half ounce; mix and apply three or four times a day.

Care for Earache.—Take a bit of cotton batting, put upon it a pinch of black pepper, gather it up and tie it, dip it into sweet oil, and insert it in the ear. Put a flannel bandage over the head to keep it warm.

MISCELLANEOUS.

MISCELLANEOUS FACTS AND INFORMATION.

THE miscellaneous facts and information in the following pages are collected from the writings of different authors. Much of this information is the result of the research, observation, and experience of generations, and to those who have the capacity of profiting by the experience of the past it will be found both practicable and useful.

FOOD AND DIET

Modern science has paid much attention to the investigation and classification of food, with the view of the better enabling us to supply, by a judicious selection from the numerous articles which nature has provided, those elements which compose the human body, and which are constantly demanded by it because constantly consumed. All natural food contains :

“ *First.*—That which makes and supplies muscle, in which the principal element is nitrogen ; therefore called nitrogenous food.

“ *Second.*—That which produces fat and supplies heat, in which the principal element is carbon ; therefore called carbonaceous food.

“ *Third.*—That which supplies bones, brain, and nerves, in which the principal element is phosphorus ; therefore called phosphatic food.

“ *Fourth.*—Substances which are ejected without being appropriated to supply the elements of the body, and which have therefore been classified as waste.

“ Repeated investigations have shown in what proportions the several properties of food are contained in the various ar-

ticles now principally used. This information is collected, to an extent practically large enough, in the following table, which shows the proportion of each class of food contained in the articles enumerated, and the judicious use of which will enable any one to supply all the elements demanded by the system :

PROPORTIONATE PROPERTIES OF FOOD.

<i>*Articles. 100 parts of each.</i>	<i>Water, etc.</i>	<i>Muscle Making Food.</i>	<i>Heat and Fat producing Food.</i>	<i>Food for Brains, Nerves, etc.</i>
Apples.....	84.0	5.0	10.0	1.0
Barley.....	14.0	15.0	68.8	4.2
Beans.....	14.8	24.0	57.7	3.5
Beef.....	50.0	15.0	30.0	5.0
Buckwheat.....	14.2	8.6	75.4	1.8
Butter.....			all.	
†Cabbage.....	90.0	4.0	5.0	1.0
Carrots.....	91.8	0.6	6.6	1.0
Cauliflower.....	89.0	3.4	3.6	1.0
‡Cheese.....	10.0	65.0	19.0	6.0
Chicken.....	46.0	18.0	32.0	4.0
Clam.....	85.0	12.0	0.5	2.5
*Codfish.....	79.0	14.0	little	5 to 6
†Corn.....	14.0	12.0	73.0	1.0
Cucumbers.....	97.0	1.5	1.0	0.5
Eels.....	76.0	17.0	3.5	3.5
Eggs, white of....	53.0	17.0	none	5.0
Eggs, yolk of.....	79.0	15.0	27.0	4.0
Fat.....			all	
Flounder.....	78.0	15.0	little	3 to 4

*"This table refers to articles in their natural condition. For example, by wheat is meant the natural grain, and not the bolted white flour almost generally used, and which is deprived of all the food for brain and of nearly all for muscle. Some portion of the properties of food is necessarily lost in cooking. Very wholesome articles are frequently rendered quite the reverse before they leave the hands of the cook. Experience and science alike concur in recommending the processes of cooking in the following order : broiling is regarded as the best, roasting second, baking third, boiling and stewing fourth. Frying is generally condemned.

† "Vegetables generally are principally composed of water and waste, and are highly useful when eaten in connection with other food rich in the elements demanded by the system. The same is true of berries and fruits generally. These latter, however, also contain acids which are indispensable for the health of the system.

‡ The article of cheese, more than any other in use among us, contains the nitrogenous and phosphatic principles, but its phosphates being regarded as insoluble, it is not a food for nerves and brains, although well adapted for supplying muscle and bone.

PROPORTIONATE PROPERTIES OF FOOD.

<i>*Articles. 100 parts of each.</i>	<i>Water, etc.</i>	<i>Muscle Making Food.</i>	<i>Heat and Fat producing Food.</i>	<i>Food for Brains, Nerves, etc.</i>
Haddock.....	80.0	13.0	little	5 to 6
Halibut.....	74.0	18.0	do.	3 to 4
Herring.....	75.0	18.0	do.	4 to 5
Lamb.....	50.5	11.0	35.0	3.5
Lentils.....	14.0	26.0	58.5	1.5
Lobster.....	79.0	14.0	little	5.0
Milk, cow's.....	86.0	5.0	8.0	1.0
Mutton.....	44.0	12.5	40.0	3.5
Oats.....	13.6	17.0	66.4	3.0
Oysters.....	87.0	10.0	little	2.5
Parsnips.....	90.0	2.0	7.0	1.0
Peas.....	14.0	23.4	60.0	2.5
Plaice.....	78.0	14.0	little	5 to 6
Pork.....	38.5	10.0	50.0	1.5
Potatoes.....	7.2	1.4	22.5	0.9
do. sweet.....	68.6	1.5	27.0	2.9
Rice.....	13.5	6.5	79.5	0.5
Rye.....	13.0	13.8	71.5	1.7
Salmon.....	72.0	20.0	little	6 to 7
Smelt.....	75.0	17.0	little	5 to 6
Sole.....	78.0	15.0	little	5 to 6
Starch.....			all	
Sugar.....			all	
Trout.....	75.0	17.0	little	5 to 6
Turbot.....	79.0	14.0	little	5 to 6
Turnips.....	94.4	1.1	4.0	0.5
Veal.....	68.5	10.1	16.5	4.5
Wheat.....	14.0	14.6	69.4	2.0
Whiting.....	78.0	15.0	little	5 to 6

" From this table it will be seen that to ascertain the amount of actual nutriment contained in each article the parts mentioned in the three right hand columns will have to be added together ; thus, in the article of apples, 5, 10, and 1 being added, show 16 parts of nutriment in each 100 parts. The first

"* Fish, generally, have but a small amount of food producing heat and fat, and are rich in the other properties. The references here are to fresh fish. When stale their natural properties are affected, and when partially decomposed they are dangerously poisonous.

"† This refers to Northern corn. Southern corn contains water, 14 ; food for muscle, 36 ; heat and fat producing food, 46 ; and food for brain, nerves, etc., 4 ; while that known as Tuscarora corn contains 14 of the first, 5 of the second, 80 of the third, and 1 of the fourth.

column designates the waste. By the judicious selection of food containing the requisite amount of waste, the bowels can generally be completely regulated and costiveness and constipation avoided or remedied.

"The following table furnishes an approximate statement of the time* required to digest the various articles named, the hours and minutes indicating the period which each separate article requires from the time it enters the stomach until it is prepared to pass into the blood :

TIME REQUIRED TO DIGEST FOOD.

<i>Articles</i>	<i>Hours.</i>	<i>Minutes.</i>
Apples—hard and sour, raw.....	2	50
Apples—mellow and sour, raw.....	2	
Barley—boiled.....	2	
Beans—boiled.....	2	30
Beef—fresh and lean, roasted.....	3	
Beef—dry, roasted.....	3	30
Beef—steak, broiled.....	3	
Beef—with salt only, boiled.....	2	45
Beef—with mustard, etc. boiled.....	3	30
Beef—old, hard, salted, broiled.....	4	15
Beef—fresh and lean, fried.....	4	
Beef—boiled.....	3	45
Bread—wheat, fresh, baked.....	3	30
Bread—corn, baked.....	3	15
Butter—melted.....	3	30
Cabbage—boiled.....	4	30
Cake—corn, baked.....	3	
Cake—sponge, baked.....	2	30
Carrots—boiled.....	6	15
Cheese—old, strong, raw.....	3	30
Chicken—full grown, fricassee.....	2	45
Codfish—cured, dry, boiled.....	2	
Custard—baked.....	2	45
Duck—domestic, roasted.....	4	
Duck—wild, roasted.....	4	30
Dumpling—apple, boiled.....	3	
Eggs—fresh, hard boiled.....	3	30
Eggs—fresh, soft boiled.....	3	
Flounder—fresh, fried.....	1	30
Gelatine—boiled.....	2	30
Goose—roasted.....	2	30

*The time required for the digestion of a specific article of food must necessarily vary in different persons, but the table will be found valuable as indicating the relative digestibility of the articles named, and as enabling the selection of such articles as are easy or hard of digestion,

<i>Articles,</i>	<i>Hours.</i>	<i>Minutes.</i>
Heart—animal, fried.....	4	
Lamb—fresh, boiled.....	2	30
Liver—beef's fresh, boiled.....	2	
Milk—raw.....	2	15
Milk—boiled.....	2	
Mutton—fresh, roasted.....	3	15
Mutton—fresh, boiled or broiled.....	3	
Oysters—fresh, raw.....	2	55
Oysters—fresh, stewed.....	3	30
Parsnips—boiled.....	2	30
Pig—sucking, roasted.....	2	30
Pig's feet—soused, boiled.....	1	
Pork—fat and lean, roasted.....	5	15
Pork—recently salted, boiled.....	4	30
Pork—recently salted, fried.....	4	15
Pork—recently salted, broiled.....	3	15
Pork—recently salted, raw.....	3	
Pork—recently salted, stewed.....	3	
Potatoes—boiled.....	3	30
Potatoes—roasted or baked.....	2	30
Rice—boiled.....	1	
Sago—boiled.....	1	45
Salmon—salted, boiled.....	4	
Sausage—fresh, broiled.....	3	20
Suet—beef, fresh, boiled.....	5	30
Suet—mutton, fresh, boiled.....	4	40
Soap—beef, vegetable and bread, boiled.....	4	
Tapioca—boiled.....	2	
Tripe—soused, boiled.....	1	
Trout—salmon, fresh, boiled.....	3	30
Turkey—roasted.....	2	30
Turkey boiled.....	2	25
Turnips—boiled.....	3	20
Veal—fresh, broiled.....	3	
Veal—fresh, fried.....	4	
Vension—steak, broiled.....	1	35

"It is estimated—and the estimate is based upon many practical observations and experiments—that, in the ordinary conditions of health, the proportions in which the system requires the several classes of food is about as follows; fifteen per cent. of nitrogenous food for muscle; sixty to seventy per cent. of carbonaceous food for heat; and two to three per cent. of phosphatic food for brain, bones and nerves. Climate and occupation necessarily vary the proportions of muscle-making and heat producing food required, more of the latter being

demanding in cold climates or cold weather than in warm, and by hard laboring persons than by those of sedentary habits. For all practical purposes, however, experience has shown that with ordinary labor, such, for example, as is required of the soldier on duty, five ounces of nitrogenous and twenty ounces of carbonaceous food meet the daily demands of the system, while in sedentary and less active occupations the amount of each may be proportionately diminished. Everything in excess of these demands, except that which is waste, is not only regarded as useless, but as positively injurious."

Food having the effect of exciting the sexual passions is called *aphrodisiac*, when having the reverse effect, *anaphrodisiac*. That certain food possesses aphrodisiac properties is an established fact, and it has even been said by some physiologists that, in conditions of perfect health of the sexual organs, chastity and lechery simply depend upon diet and are under the absolute control of the individual. It would be difficult to define distinctly all the articles of food credited with aphrodisiac properties, but, in a general way, it may be said that those which largely contain the phosphatic element and furnish food for nerves and brains, are especially regarded as possessing such properties. Efforts have been made to introduce this element into certain articles of consumption, especially into white bread,* by the addition of preparations of phosphorus; but as phosphorus, even in very small portions, is a deadly poison in any state except as naturally existing in food, all attempts to introduce it artificially into any article of consumption, must be liable to serious objections.

A careful study and application of the preceding tables and remarks will be found sufficient to enable anyone to select such articles of food as may be demanded, either in health or disease, in reference alike to nutriment and digestibility. Individual tastes and antipathies must, of course, be respected, and in no case should anything be eaten which is known to disagree with the individual, however wholesome it may otherwise be. The taste, appetite and feelings regularly call for the elements demanded by the system, and with the information here furnished ordinary reason and judgment can so guide

*Wheat, in its natural state, more nearly than any other article, contains the amount of all the elements required by the system; but as the food for muscle, nerves, and brains is contained in that part of the grain which is separated by the process of bolting very little beyond the heat-producing principle remains in the white flour so generally used for making bread. To such an extent is this the fact that it requires fifteen barrels of white flour to furnish the same amount of food for muscle, nerves, and brains as is contained in a single barrel of flour not deprived of any of the elements of the grain, a sad exhibit of the power of custom in perverting natural food and perpetuating human stupidity.

them in determining the kind and quantity of food required that there should be no danger of going astray.

THE HUMAN TEMPERAMENTS.

By these are meant certain types, forms or conformations of the human body, each known and distinguished from the other by certain characteristics, which enable those who are familiar with these peculiarities to readily distinguish one temperament from the other. The existence of the temperaments is believed to depend upon the development of certain parts or systems in the body, and each is accompanied by different degrees of activity of the brain, and corresponding difference in the talents and manifestations of the individual. They are four in number, viz: nervous, sanguine, bilious, and lymphatic. When the brain and nerves are predominant, it is termed the *nervous* temperament; if the lungs and bloodvessels constitutionally predominate, the *sanguine*, if the muscular and fibrous systems are in the ascendancy the *bilious*, and when the glands and assimilating organs are in the ascendancy, it is termed the *lymphatic* or *phlegmatic*.

1. The nervous is indicated by fine, thin air, small muscles, thin skin, pale countenance, brilliant eyes, with great quickness and sensitiveness to impressions, and is really the mental or intellectual temperament.

2. The sanguine is known by a stout, well-defined form, a full face, florid complexion, moderate plumpness, firm flesh, chestnut or sandy hair, and blue eyes. This is the tough, hardy, working temperament, excessively fond of exercise and activity, and a great aversion to muscular quiescence and inactivity, and consequently averse to books and close literary pursuits.

3. The bilious is indicated by a thin, spare face, dark skin, black hair, firm flesh, moderate stoutness, with rough, harsh, and strongly marked features. This temperament gives great will, elasticity, and powers of endurance, and, when combined with the nervous, is the great, efficient, moving temperament in the great events of the world.

4. The lymphatic is indicated by paleness, roundness of the form, softness of muscle, fair hair, sleepy, half-closed eyes, and a dull, sluggish, inexpressive face. In this temperament the brain and all the other parts of the body appear to be slow, dull, and languid, and the whole body little else than one great manufactory of fat. These temperaments however, are rarely found pure, but mixed or blended in an almost endless variety of ways, producing the ever-varying peculiarities of human character and intellect.—Dr. A. H. PLATT'S "*Human Life Prolonged*."

THE ART OF MIND READING.

We are indebted to that valuable and interesting magazine the "Popular Science Monthly," for the following explanation of the phenomenon of mind reading. It was written by a physician of high standing (George M. Beard, M. D.) who has given much attention to this and kindred subjects.

IN the history of science and notably in the history of physiology and medicine, it has often happened that the ignorant and obscure have stumbled upon facts and phenomena which, though wrongly interpreted by themselves, yet, when investigated and explained, have proved to be of the highest interest. The phenomena of the emotional trance, for example, had been known for ages, but not until Mesmer forced them on the scientific world, by his public exhibitions and his ill-founded theory of animal magnetism, did they receive any serious and intelligent study. Similarly the general fact that mind may so act on body as to produce involuntary and unconscious muscular motion was by no means unrecognized by physiologists, and yet not until the "mind-reading" excitement was it demonstrated that this principle could be utilized for the finding of any object or limited locality on which a subject, with whom an operator is in physical connection, concentrates his mind.

Although, as I have since ascertained, experiments of this kind had been previously performed in a quiet, limited way in private circles, and mostly by ladies, yet very few had heard of or witnessed them; they were associated in the popular mind very naturally with "mesmerism;" or "animal magnetism," and by some were called "mesmeric games." The physiological explanation had never been even suggested; hence the first public exhibitions of Brown, with his brilliantly successful demonstrations of his skill in this direction, were a new revelation to physiologists as well as to the scientific world in general.

The method of mind-reading, introduced by Brown, which is but one of many methods that have been or may be used, is as follows:

The operator, usually blind-folded, firmly applies the back

of the hand of the subject to be operated on against his own forehead, and with his other hand presses lightly upon the palm and fingers of the subject's hand. In this position he can detect, if sufficiently expert, the slightest movement, impulse, tremor, tension, or relaxation, in the arm of the subject. He then requests the subject to concentrate his mind on some locality in the room, or on some hidden object, or on some one of the letters of the alphabet suspended along the wall. The operator, blindfolded, marches sometimes very rapidly with the subject up and down the room or rooms, up and down stairways, or out-of-doors through the streets, and, when he comes near the locality on which the subject is concentrating his mind, a slight impulse or movement is communicated to his hand by the hand of the subject.

This impulse is both involuntary and unconscious on the part of the subject. He is not aware, and is unwilling, at first, to believe, that he gives any such impulse; and yet it is sufficient to indicate to the expert and practised operator that he has arrived near the hidden object, and then, by a close study and careful trials in different directions, upward, downward, and at various points of the compass, he ascertains precisely the locality, and is, in many cases, as confident as though he had received verbal communication from the subject.

Even though the article on which the subject concentrates his mind be very small, it can quite frequently be picked out from a large number, provided the subject be a good one, and the operator sufficiently skillful. The article is sometimes found at once, with scarcely any searching, the operator going to it directly, without hesitation, and with a celerity and precision that, at first sight, and until the physiological explanation is understood, justly astonish even the most thoughtful and skeptical. (In New Haven I saw Brown, before a large audience, march off rapidly through the aisle and find at once the person on whom the subject was concentrating his mind, although there was the privilege of selecting any one out of a thousand or more present.) These experiments, it should be added, are performed in public or private, and on subjects of unquestioned integrity, in the presence of experts, and under a combination of circumstances and conditions for the elimination of sources of error that make it necessary to rule out at once the possibility of collusion.

The alternative is, therefore, between the actual transfer of thought from subject to operator, as has been claimed, and the theory of unconscious muscular motion and relaxation on the part of the subject, the truth of which I have demonstrated by numerous experiments,

One of the gentlemen with whom I have experimented, Judge Blydenberg, who began to test his powers directly after I first called public attention to the subject in New Haven, claims to succeed, even with the most intellectual persons, provided they fully comply with the conditions, and honestly and persistently concentrate their minds. One fact of interest, with regard to his experiments, is the exceeding minuteness of the objects that he finds. A large number of the audience empty their pockets on the table, until it is covered with a medley of keys, knives, trinkets, and miscellaneous small objects. Out of them the subject selects a small seed a little larger than a pea, and even this the operator, after some searching, hits precisely.

One may take a large bunch of keys, throw them on the table, and he picks out the very one on which the subject concentrates his mind.

Another fact of interest in his experiments is that, if a subject thinks over a number of articles in different parts of the room, and, after some doubt and hesitation, finally selects some one, the operator will lead him, sometimes successively, to the different objects on which he has thought, and will wind up with the one that he finally selected. He also performs what is known as the "double test," which consists in taking the hand of a third party, who knows nothing of the hidden object, but who is connected with another party who does know, and who concentrates his mind upon it. The connection of these two persons is made at the wrist, and the motion is communicated from one to the other through the arms and hands. The "double test" has been regarded by some as an argument against the theory that this form of mind-reading was simply the utilizing of unconscious muscular motion on the part of the persons operated upon.

This gentleman represents that the sensation of muscular thrill is very slight indeed, even with good subjects; and, in order to detect it, he directs his own mind as closely as possible to the hand of the subject.

In all these experiments, with all mind-readers, the requirement for the subject to concentrate the mind on the locality agreed upon is absolute; if that condition is not fulfilled, nothing can be done, for the very excellent reason that, without such mental concentration, there will be no unconscious muscular tension or relaxation to guide the operator.

Experiments of the following kind I have made repeatedly with the above-named gentlemen:

A dozen or more pins may be stuck about one inch or half an inch apart into the edge of a table; I concentrate my mind

on any one of these pins, telling no one. The operator enters the room, gets the general direction of the object in the usual way, and, when he has come near to the row of pins, he will limit the physical connection to one of his index-fingers, pressing firmly against one of mine, and in this way he soon finds the head of the pin on which my mind has been concentrated. The only limitation of area in the locality that can be found by a good mind-reader with a good subject is, that two objects should not be so near to each other that the finger of the operator strikes on both at once.

When I began the study of this subject, I supposed, even after the true theory of the matter had become clear to me, that very small objects and narrow areas could not be found in this way. Subsequent experiments showed that this supposition was erroneous. In a wide hall, in the presence of a large audience, where the subject had the right to think of any object he chose. Brown once found, after considerable searching, so limited an area as a capital letter in the title of a newspaper pinned up on the wall and barely within reach. About an hour after, in the same place, he found a very small vial out of quite a large number ranged in a row. Although reasoning deductively from the known relations of mind to body, I had established conclusively to my own mind that the so-called mind-reading was really muscle-reading, yet I could not believe, until the above-named experiments had been made, and frequently repeated, that it was possible for even the most expert operator to find such small objects; and no physiologist, I am sure, would have believed such precision in these experiments conceivable until his general deductions had been many times verified, and supplemented by observations in which every source of error was guarded against.

As already remarked, there are a variety of ways of making the physical connection between subject and operator. A lady may go out of the room, and while she is absent an object is hidden. She returns, and two ladies, who know where the object is, stand up beside her in the middle of the room and place both of their hands upon her body, one hand in front, the other behind; all three stand there for a moment, the two subjects who know where the object is, keeping their minds intensely concentrated on that locality. In a moment or so this lady who is to find the object moves off in the direction where it is, the other ladies with her still keeping their hands upon her, and in nearly all cases she finds it. This is accomplished by the unconscious muscular tension of the two ladies who know where the object is, acting upon the person of the lady who is seeking it.

This experiment I have repeated with a number of amateur performers, and in all cases with pretty uniform success. This method is easier, both to learn and to practice, than some of the others ; it is also far less artistic, and is not at all adapted for the finding of very small localities. It illustrates, however, the general principle of mind acting on body producing muscular tension in the direction of that locality on which the thoughts are concentrated.

The relaxation, when the locality or its neighborhood is reached, is not so distinctly appreciated in this method of experimenting, which is sufficient, however, to enable the operator to get the right direction and to proceed until the corner or side of the room is reached ; then, by a combination of manipulation and guess-work, she will, after a few trials, get hold of the precise object hidden, or locality thought of. When the operator and subject are connected by the methods practised by Brown, it is possible to detect also the relaxation when the locality is reached, and, guided by this, the master in the art knows just when and where to stop and, in very many cases, feels absolutely sure that he is right, and with a good subject is no more liable to error than he would be to hear wrongly or imperfectly if directed by word of mouth.

The special methods of muscle-reading here described may be varied almost indefinitely, the only essential condition being, that the connection between the subject or subjects is of such a nature as to easily allow the sense of muscular tension or relaxation to be communicated. Instead of two subjects, there may be three, four, or half a dozen, or but one. With a number of subjects the chances of success are greater than with one, for the two-fold reason that the united muscular tension of all will be more readily felt than that of but one, and because any single subject may be a bad one—that is, one who is capable of muscular control—while among a number there will be very likely one or more good ones. For these two reasons, amateurs succeed in this latter method when they fail or succeed but imperfectly after the method of Brown.

A method frequently used, although it is not very artistic, consists in simply taking the hand of the object and leading him directly, or, as is more likely to be the case, indirectly to the locality on which his mind is concentrated.

J. Stanley Grimes thus describes the performance of a mind-reader in Chicago : “ I repeatedly witnessed similar performances with different experts in this branch and under circumstances where every element of error from intentional or unintentional collusion was rigidly excluded. At the request of the company the same young lady was again sent from the room

and blindfolded, as on previous occasions. The gentleman requested the company to suggest anything they desired the subject should be willed to do, thus removing any possibility of a secret agreement to deceive between the parties. It was suggested that the young lady should be brought into the room and placed in a position with her face toward the north ; that the gentleman should then place his fingers upon her shoulder as before ; that she should turn immediately to the right facing the south and proceed to a certain figure in the parlor-carpet ; then turning to the west, she was to approach a sofa in a remote corner of the room, from which she should remove a small tidy, which she should take to the opposite side of the room, and place it upon the head of a certain young gentleman in the company ; she was then to proceed to the extreme end of the parlor, and take a coin from the right vest pocket of a gentleman, and return to the opposite side of the room, and place the coin in the left vest pocket of another gentleman named ; she was then to remove the tidy from the head of the gentleman upon whom it had been placed, and return it to the *tete-a-tete* where she originally found it.

"I must confess to no little surprise when I saw the young lady perform with the most perfect precision every minute detail as above described, and with the most surprising alacrity ; in fact so quick were her motions that it was with the greatest difficulty that the gentleman could keep pace with the young lady's movements."

I have seen a performer—who though one of the pioneers in this art is far less skillful than many with whom I have experimented—take a hat from the head of a gentleman in a small private circle, and carry it across the room and put it on the head of another gentleman ; take a book or any other object from one person to another ; or go in succession to different pictures hanging on the wall and perform other feats of a similar character, while simply taking hold of the wrist of the subject. In the experiment described by Mr. Grimes the subject placed three fingers of his right hand on the shoulder of the operator. Note the fact that in all these experiments direction and locality are all that the mind-reader finds ; the quality of the object found or indeed whether it be a movable object at all or merely a limited locality as a figure in the carpet or on the wall, is not known to the mind-reader until he picks it up or handles it ; then if it be a small object as a hat, a book, or coin, or tidy, he very naturally takes it and moves off with it in the direction indicated by the unconscious muscular tension of the subject, and leaves it where he is ordered by unconscious muscular relaxation. In the great excitement that

attends these novel and most remarkable experiments the entranced audience fail to notice that the operator really finds nothing but direction and locality.

I have said that various errors of inference, as well as of observation, have been associated with these experiments. A young lady who had been quite successful as an amateur in this art was subjected by me to a critical analysis of her powers before a large private audience. She supposed that it was necessary for all the persons in the audience to concentrate their minds on the subject as well as those whose hands were upon her. I proved by some decisive experiments, in which a comparison was made with what could be done by chance alone, that this was not necessary and that the silent, unexpressed will of the audience had no effect on the operator, save certain nervous sensations created by the emotion of expectancy. Similarly I proved that when connected with the subjects by a wire, she could find nothing, although she experienced various subjective sensations, which she attributed to "magnetism," but which were familiar results of mind acting on body.

Another lady, who is quite successful in these experiments, thought it was necessary to hide keys, and supposed that "magnetism" had something to do with it. I told her that that was not probable, and tried another object, and found that it made no difference what the object was. She supposed that it was necessary that the object should be secreted on some person. I found that this was not necessary. She does not always succeed in finding the exact locality at once, but in some cases she goes directly to it; she very rarely fails.

In order to settle the question beyond dispute whether unconscious muscular action was the sole cause of this success in finding objects, I made the following crucial experiments with this lady: Ten letters of the alphabet were placed on a piano, the letters being written on large pieces of paper. I directed her to see how many times she would get a letter which was in the mind of one of the observers in the room correctly by chance purely, without any physical touch. She tried ten times and got it right twice. I then had her try ten experiments with the hand of the person operated on against the forehead of the operator, the hand of the operator lightly touching against the fingers of this hand, and the person operated on concentrating her mind all the while on the object, and looking at it. In ten experiments tried this day, with the same letters, she was successful six times. I then tried the same number of experiments with a wire, one end being attached to the head or hand of the subject, and the other end

to the head or hand of the operator. The wire was about ten feet long and was so arranged—being made fast at the middle to a chair—that no unconscious muscular motion could be communicated through it from the person on whom she was operating. She was successful but once out of ten times. Thus we see that by pure chance she was successful twice out of ten times; by utilizing unconscious muscular action in the method of Brown she was successful six times out of ten. When connected by a wire she was less successful than when she depended on pure chance without any physical connection. In order still further to confirm this, I suggested to this lady to find objects with two persons touching her body in the manner we have above described. I told these two to deceive her, concentrating their minds on the object hidden, at the same time using conscious motion toward some other part of the room. These experiments several times repeated, showed that it was possible to deceive her, just as we had found it possible to deceive other muscle-readers.

The question whether it is possible for one to be a good muscle-reader and pretty uniformly successful, and yet not know just how the trick is done, must be answered in the affirmative. It is possible to become quite an adept in this art without suspecting even remotely the physiological explanation. The muscular tension necessary to guide the operator is but slight, and the sensation it produces may be very easily referred by credulous, uninformed operators to the passage of "magnetism;" and I am sure that with a number of operators on whom I have experimented this mistake is made. Some operators declare that they cannot tell how they find the locality, that their success is to them a mystery; these declarations are made by private, amateur performers, who have no motive to deceive me, and whose whole conduct during the experiments confirms their statements. Other operators speak of thrills or vibrations which they feel, auras and all sorts of indefinable sensations. These manifold symptoms are purely subjective, the result of mind acting on the body, the emotions of wonder and expectancy developing various phenomena that are attributed to "animal magnetism," "mesmerism" or "electricity"—in short, to everything but the real cause. I have seen amateurs who declared that they experienced these sensations when trying without success to read mind through the wires, or perhaps without any connection with the subject whatever. Persons who are in the vicinity of galvanic batteries, even though not in the circuit, very often report similar experiences.

The facts which sustain the theory that the so-called mind-reading is really muscle-reading—that is, unconscious muscular tension and relaxation on the part of the subject—may be thus summarized :

1. Mind-readers are only able to find direction and locality, and in order to find even these, they must be in physical connection with the subject, who must move his body or some portion of it—as the fingers, hand or arm. If the subject sits perfectly still, and keeps his fingers, hand and arm perfectly quiet, so far as it is possible for him to do so by conscious effort, the mind-reader can never find even the locality on which the subject's mind is concentrated ; he can only find the direction where the locality is. Mind-readers never tell what an object is nor can they describe its color or appearance ; locality and nothing more definite than locality is all they find. The object hidden may be a coin or a corn-cob, a pin or a pen-holder, an elephant's tusk or a diamond pin—it is all the same. Again, where connection of the operator with this subject is made by a wire, so arranged that mass-motion cannot be communicated and the subject concentrates his mind ever so steadily, the operator does just what he would do by pure chance and no more. This I have proved repeatedly with good subjects and expert performers.

2. The subject can successfully deceive the operator in various ways—first of all, by using muscular tension in the wrong direction, and muscular relaxation at the wrong locality while at the same time the mind is concentrated in the right direction. To deceive a good operator in this way is not always easy, but after some practice the art can be acquired, and it is a perfectly fair test in all experiments of this nature.

Yet another way to deceive the mind-reader is, to think of some object or locality at a great distance from the room in which the experiments are made, and if there be no ready means of exit, the performer will be entirely baffled. I am aware that some very surprising feats have been done in the way of finding distant out-of-door localities by muscle-readers but in these cases there has usually been an implied understanding that the search was to be extended to out-of-doors ; muscle-readers have thus taken their subject up and down stairs or from one room or hall into another, and out-of-doors until the house or locality was reached.

In Danielsonville, Connecticut, Brown after an evening's exhibition in which his failures had been greater than usual (the intelligent committee having the matter in charge being prepared by previous discussion of the theory of unconscious muscular motion), took a subject and led him from the hotel

in the darkness through the streets, to some rather out-of-the-way building on which the subject had fixed his mind. A somewhat similar exploit is recorded of Corey, a performer in Detroit.

Another way in which deception may be practised is for the subject to select some object or locality on the person of the muscle-reader. This object may be a watch, or a pocket-book, or a pencil-case, or any limited region of his clothing, as a button, a cravat, or wristband. If such a selection be made, and the method of physical connection above described be used, the experiment will be a failure, provided the muscle-reader does not know or suspect that an object on his own person, is to be chosen. Similarly if the subject selects a locality on his own person, as one of the fingers or finger-nails of the hand that connects with the muscle-reader. When such tests are used, there is not, so to speak, any leverage for the tension of the arm toward the locality on which the mind is concentrated and the muscle-reader either gets no clew, or else one that misleads him.

3. When a subject who has good control over his mental and muscular movements keeps the arm connected with the operator perfectly stiff, even though his mind be well concentrated on the hidden object, the operator cannot find either the direction or the locality. This is a test which those who have the requisite physical qualifications can sometimes fulfill without difficulty.

Here I may remark that the requirement to concentrate the mind on the locality and direction sought for all the time the search is being made is one that few if any can perfectly fulfill. Any number of distracting thoughts will go through the best-trained mind of one who, in company with a blindfolded operator, is being led furiously up and down aisles, halls, streets and stairways, fearful each moment of stumbling or striking his head, and followed it may be, by astonished and eager investigators. And yet these mental distractions do not seem to interfere with the success of the experiment unless the arm is kept studiously rigid, in which case nothing is found save by pure chance. The best subjects would appear to be those who have moderate power of mental concentration and slight control over their muscular movements. Credulous wonder-loving subjects are sometimes partially entranced through the emotions of reverence and expectation ; with subjects in this state operators are quite sure of success.

4. The uncertainty and capriciousness of these experiments, even with expert operators, harmonize with the explanation here given. Even with good subjects all mind-readers do not

uniformly succeed ; there is but little certainty or precision to the average results of experiments, however skillfully performed. An evening's exhibition may be a series of successes or a series of failures according to the character of the subjects ; and even in the successful tests the operator usually must try various directions and many localities sometimes for ten or fifteen minutes before he finds the locality sought for ; cases where the operator goes at once in the right direction, stops at the right locality, and knows when he has reached it, exceptional.

5. Many of those who became expert in this art are aware that they succeed by detecting slight muscular tension and relaxation on the part of the subject.

Some operators have studied the subject scientifically, and are able to analyze with considerable precision the different steps in the process. In the minds of many this fact alone is evidence adequate to settle the question beyond doubt.

6. A theoretical and explanatory argument is derived from the recent discovery of motor centers in the cortex of the brain.

I was repeating the experiments of Fritsch and Hitzig at the time when my attention was first directed to the remarkable exhibitions of Brown, and the results of my studies in the electrical irritation of the brains of dogs and rabbits suggested to me the true explanation of mind-reading before any opportunity had been allowed for satisfactory experiments.

The motto "when we think, we move," which I have sometimes used to illustrate the close and constant connection of mind and body, seems to be justified by these experiments on the brain, and may assist those who wish to obtain a condensed statement of the physiology of mind-reading. Taking into full consideration the fact that all physiologists are not in full accord as to the interpretation to be given to these experiments, whether for example, the phenomena are due to direct or reflex action, still it must be allowed by all who study this subject experimentally, that thought-centers and muscle-centers are near neighbors, if not identical.

The popular theory to account for these failures is the weariness or exhaustion of the operator ; but both in New York and in New Haven it was observed that Brown met with his most brilliant successes in the latter part of the evening, the reason being that he happened then to have better subjects.

From an editorial in the "Boston Medical and Surgical Journal," (September 23, 1875,) referring to the mind-reading exhibitions, and accepting the explanation here given, I make the following extract : "The whole performance seems to us

to furnish good illustrations of one or two well-known principles of great physiological interest. Of these the most important is one that finds at once support and application in the modern doctrine of the nature of aphasia and kindred disorders ; namely, that the thought, the conscious mental conception of an act differs from the voluntary impulse necessary to the performance of that act only in that it corresponds to a fainter excitation of nervous centers in the cortex cerebri which in both cases are anatomically identical. Thus in certain forms of aphasia, the power to think in words is lost at the same time with the power of speech. Some persons think definitely only when they think aloud, and it would readily be believed in the case of children and uneducated persons that the ability to read would often be seriously interfered with if they were not permitted to read aloud. Similarly a half-premeditated act of any kind slips often into performance before its author is aware of the fact. Further, there is reason to think, from the experiments of Hitzig, that these same centers may be excited by the stimulus of electricity so as to call out some of the simpler co-ordinated movements of the muscles on the opposite side of the body. Applying now, this principle to the case in hand, it will be evident that for the person experimented with to avoid giving 'muscular hints,' of either a positive or negative kind, would be nearly impossible."

In all these experiments it should be observed there is no one muscle, there is no single group of muscles, through which this tension and relaxation are developed ; it is the finger, the hand, the arm, or the whole body, according to the method employed. * Among the various methods of making connection between the subject and operator, are the following :

1. The back of the subject's hand is held firmly against the forehead of the operator, who, with his other hand, lightly touches the fingers of the subject's hand.

This is, undoubtedly, the most artistic of all known methods.

2. The hand of the operator loosely grasps the wrist of the subject.

This is a very inartistic method, and yet great success is oftentimes attained by it.

3. One finger of the operator is applied to one finger of the subject, papillæ touching papillæ.

This is a modification of the first method ; by it exceedingly small objects or localities are found.

4. The operator is connected in the usual way with a third party who does not know the locality thought of by the subject, but is connected with the subject by the wrist ("double test.")

In this experiment, which astounded even the best observers, the unconscious muscular motion was communicated from the subject to the arm of the third party, and through the arm of the third party to the operator.

5. Two, three or more subjects, who agree on the locality to be thought of, apply their hands to the body of the operator in front and behind.

This method is excellent for beginners, and the direction is easily found by it; but it is obviously not adapted for the speedy finding of small objects; it is frequently used by ladies.

6. The hand of the subject lightly rests on the shoulder of the operator.

In all these methods the operator is usually blindfolded, so that he may get no assistance from any other source than the unconscious muscular action of the subject.

The movements of the operator in these experiments may be either very slow, cautious, and deliberate, or rapid and reckless. Brown in his public exhibitions, was very careful about getting the physical connection right, and then moved off very rapidly, sometimes in the right direction, sometimes in the wrong one, but frequently with such speed as to inconvenience the subject on whom he was operating. These rapid movements give greater brilliancy to public experiments and serve to entrance the subject, and thus to render him far more likely to be unconscious of his own muscular tension and relaxation through which the operator is guided.

The power of muscle-reading depends mainly, if not entirely, on some phase of the sense of touch. Dr. Hanbury Smith tells me that a certain maker of lancets in London, had acquired great reputation for the superiority of his workmanship. Suddenly there was a falling off in the character of the instrument that he sent out, and it was found that his wife, on whom he had depended to test the sharpness of the edge on her finger or thumb, had recently died.

That the blind acquire great delicacy of touch has long been known; Laura Bridgman is a familiar illustration. Dr. Carpenter states (although there are always elements of error through the unconscious assistance of other senses in cases of this kind) that Miss Bridgman recognized his brother, whom she had not met for a year, by the touch of the hand alone.

Every physician recognizes the fact of this difference of susceptibility to touch; and in the diagnosis of certain conditions of disease, much depends on the *tactus eruditus*. I am not sure whether this delicacy of perception, by which muscle-reading is accomplished, is the ordinary sense of touch, that of con-

tact, or of some of the special modifications of this sense. It is to physiologists and students of diseases of the nervous system a well-known fact that there are several varieties of sensibility—to touch, to temperature, to pressure or weight, and to pain—which, possibly, represent different rates or modes of vibration of the nerve-force.

The proportion of persons who can succeed in muscle-reading, by the methods here described, is likewise a natural subject of inquiry. Judging from the fact that out of the comparatively few who have made any efforts in this direction, a large number have succeeded after very little practice, and some few, who have given the matter close attention, have acquired great proficiency, it is probable that the majority of people of either sex, between the ages of fifteen and fifty, could attain, if they chose to labor for it, with suitable practice, a certain grade of skill as muscle-readers, provided, of course, good subjects were experimented with. It is estimated that about one in five or ten persons can be put into the mesmeric trance by the ordinary processes; and, under extraordinary circumstances, while under great excitement, and by different causes, every one is liable to be thrown into certain stages or forms of trance; the capacity for the trance-state is not exceptional; it is not the peculiar property of a few individuals—it belongs to the human race; similarly with the capacity for muscle-reading.

The age at which this delicacy of touch is most marked is an inquiry of interest; experience, up to date, would show that the very old are not good muscle-readers. I have never known of one under fifteen years of age to study this subject; although it is conceivable that bright children, younger than that age, might have sufficient power of attention to acquire the art, certainly if they had good instruction in it.

In these mind-reading experiments, as indeed in all similar or allied experiments with the living human beings, there are six sources of error, all of which must be absolutely guarded against if the results are to have any precise and authoritative value in science.

1. The involuntary and unconscious action of brain and muscle, including trance, in which the subject becomes a pure automaton. I have used the phrase "involuntary life" to cover all these phenomena of the system that appear independently of the will. The majority of those who studied the subject of mind-reading—even physicians and physiologists—failed through want of a proper understanding or appreciation of this side of physiology.

2. Chance and coincidences. Neglect of this source of error was the main cause of the unfortunate results of the wire and chain experiments with mind-readers.

3. Intentional deception on the part of the subject.

4. Unintentional deception on the part of the subject.

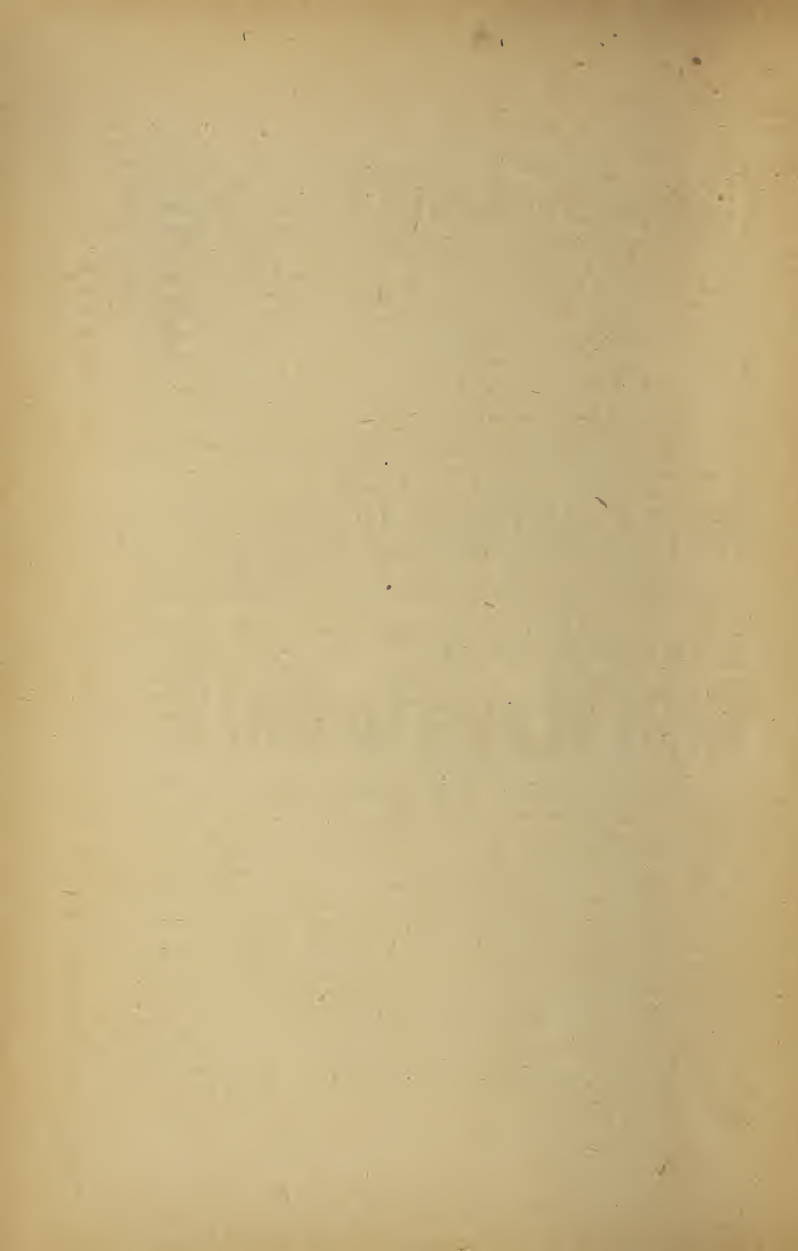
5. Collusion of confederates. To guard against all the above sources of error it is necessary for the experimenter himself to use deception.

6. Unintentional assistance of audience or bystanders.

When the muscle-reader performs before an enthusiastic audience, he is likely to be loudly applauded after each success; and, if the excitement be great, the applause, with shuffling and rustling, may begin before he reaches the right locality, while he is approaching it; when, on the other hand, he is far away from the locality, the audience will inform him by ominous silence. The performance thus becomes like the hide-and-seek games of children, where they cry "Warm!" as the blindfolded operator approaches the hidden object; "Hot!" as he comes close to it; and "Cold!" when he wanders far from it. Some of the apparent successes with the wire-test may be thus explained.

In regard to all the public exhibitions of muscle-readers, it should be considered that the excitement and *eclat* of the occasion contribute not a little to the success of the operator; the subject grows enthusiastic—are partly entranced, it may be—become partners in the cause of the performer—and unconsciously aid him far more than they would do in a similar entertainment that was purely private. In a private entertainment of muscle-reading at which I was present, one of the subjects, while standing still, with his hands on the operator, actually took a step forward toward the locality on which his mind was concentrated, thus illustrating in a visible manner the process by which muscle-reading is made possible.

The subject under discussion, it will be observed, is to be studied both inductively and deductively. The general claim of mind or thought reading is disproved not by any such experiments as are here detailed, no matter how accurate or numerous they may be, but my reasoning deductively from the broad principle of physiology, that no human being has or can have any qualities different in kind from those that belong to the race in general. The advantage which one human being has over another—not excepting the greatest geniuses and the greatest monsters—is, and must be, of degree only.



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